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Montreal Medical Journal

Biological & Medical Serials

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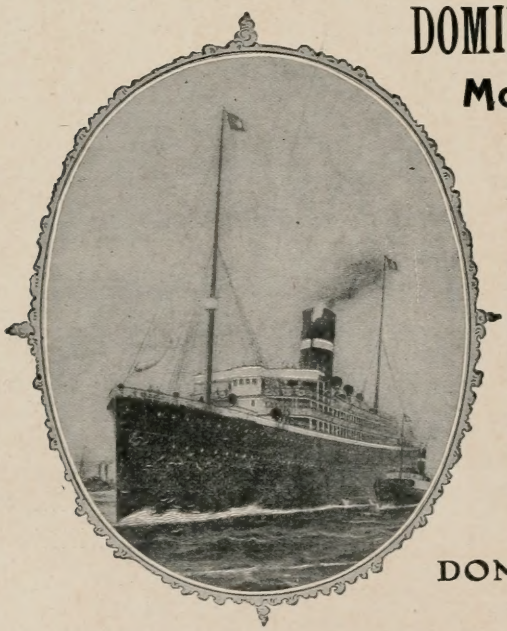

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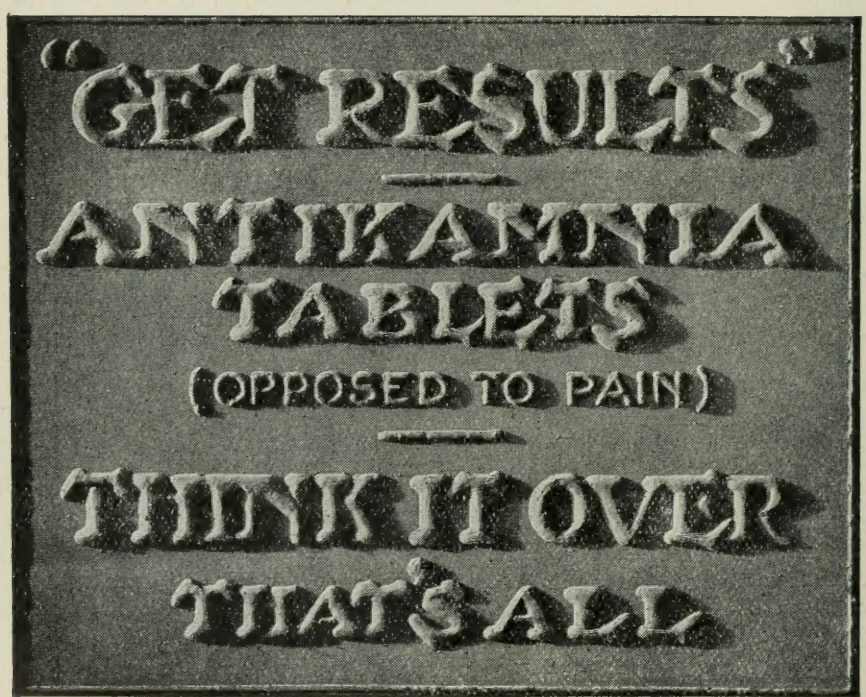

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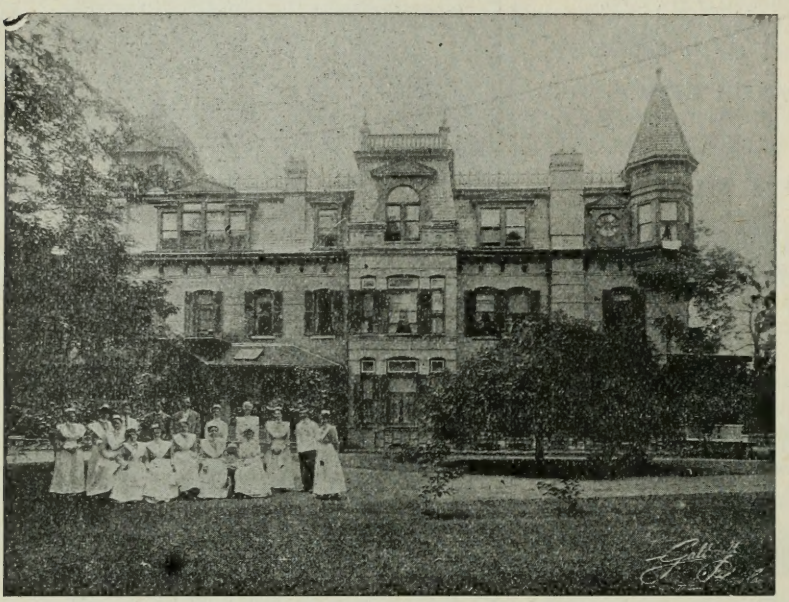

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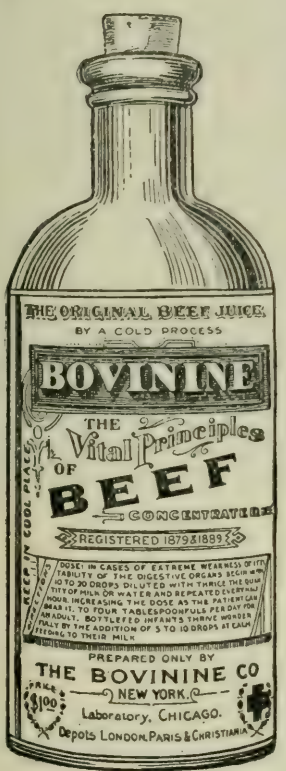

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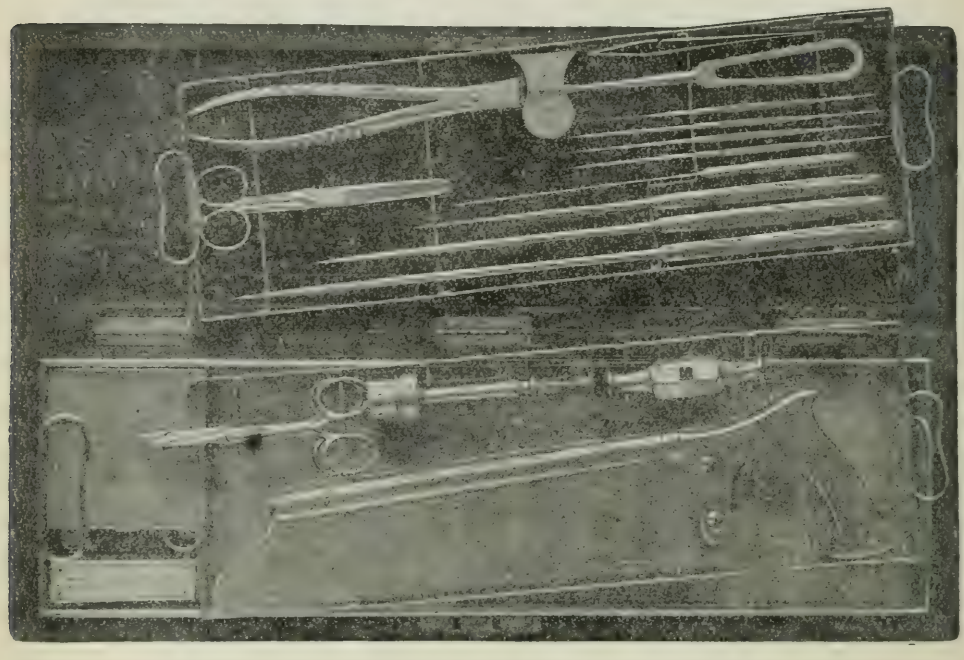

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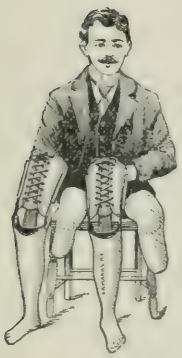

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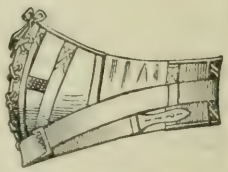

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Montreal Medical Journal

A Monthly Record of the Progress of Medical and Surgical Science.

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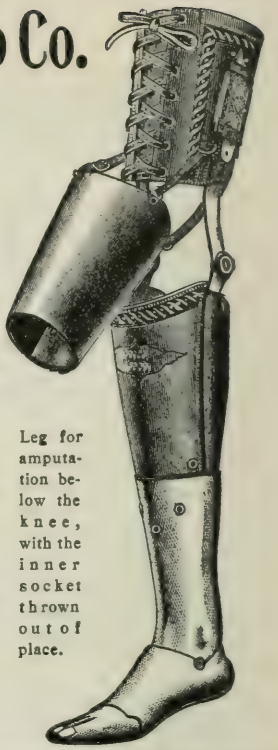

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THE
MONTREAL MEDICAL JOURNAL.

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IODINE IN THE TREATMENT OF TUBERCULOSIS.

BY

GEORGE A. BROWN,
Physician to the Montreal Dispensary.

Consumption cannot be cured, is the statement which was heard thirty years ago. Consumption can be cured, is the statement which is prevalent to-day. Both statements are equaly true and equally false. Some cases can be cured, and some cannot, is the truth. Yet, physicians to-day approach a case of consumption with new confidence, and patients bring to their aid a new hopefulness.

The progress of knowledge has been along two lines, towards the discovery of a specific remedy, and towards a better understanding of the capabilities of the organism for resisting the disease.

If to-day our methods are more satisfactory, it is due to the workers who have insisted upon the *vis medicatrix naturae*, who have recognized the capacity of the body to deal with disease, who have striven to strengthen that resistance by the well-established support of fresh air, sunlight, an improved hygiene, and increased nutriment, or superalimentation, as the scientific men prefer to call it. To this must be added the employment of drugs as an adjuvant to these remedial measures.

Amongst the remedies which have for a long time obtained some favour in the treatment of tuberculosis is iodine. Indeed, it is probable that the high place deservedly attained by cod-liver oil is due to the action of this and similar substances. I propose in this paper to relate the experience which I have had with this element, employed in rather an unusual way, and I may say at once, that the results have been extremely gratifying.

The method which I have employed is the injection of a solution in which iodine is held in suspension. The preparation is made according to the following formula: precipitated iodoform which con-

Read before the Montreal Medico-Chirurgical Society.

tains 96.7 per cent. of iodine, 100 grains; acacia powder, 25 grains; glycerine, 200 minims; carbolic acid, 5 minims; boiled distilled water, 300 minims.

I have employed this method for twelve years, and was induced to make trial of it after reading Krause's monograph upon iodoform in the treatment of tubercular joints. The use of iodoform in tuberculosis of the joints is a well established procedure. So recently as March 10th, 1906, we find an inquiry in the *British Medical Journal*. H. E. L. asks if the injection of iodoform in glycerine into a tubercular knee-joint is sufficiently often beneficial and free from risk to be undertaken. To this the editors reply:

"We have referred this question to Mr. A. H. Tubby, who writes: 'In early cases of tuberculous synovitis in which fair movement is present, and with no backward dislocation, and when the thickening of the synovial membrane does not yield to rest and the application of mercurial ointments, the aseptic injection of sterilized iodoform and glycerine is free from risk and beneficial. About 1 drachm of the emusion should be injected into various parts of the joint at intervals of three weeks, and the parts kept at rest for three months afterwards.'"

What I will endeavour to show is that this method is efficacious not only in affections of the joints, but in other tubercular conditions as well; that, in addition to the local effect, it has also a constitutional action.

The injection is done under the usual directions for securing antisepsis. The vessels holding the emulsion are sterilized by heat, and a syringe with a metal piston is employed, that it, too, may be made surgically clean. The site which I have chosen is the space between the left acromion process and the capsule of the shoulder-joint. The pain of the operation is not long-continued; absorption is slow, and the chance of acute poisoning is small. If the pain be severe, a little morphine may be employed. A rather fine needle is used so that the solution will not ooze out after the point is withdrawn.

After disinfection of the skin over the shoulder joint, a point corresponding to the tubercle on the posterior part of the acromion process is located, and the skin just below it is frozen with ethyl chloride. The needle is inserted close to the bone about half an inch, and the solution slowly injected. It is better to dress the site of the injection with sterilized gauze and a bandage, and then fix the arm to the body with a bandage for two days.

At first as high as forty-eight grains of the solution were given.

This was in a case of tuberculosis of the larynx, which was so swollen that I could not see the trachea. The effect was quite marked, and the swelling entirely disappeared. Although this dose had a favourable action it was found to be too large and depressing. The amount for non-pulmonary cases is 12 to 24 grains, and in pulmonary from 8 to 12 grains, according to the amount of disease, and the condition of the patient. If there is much disease and depression, it is better to use smaller doses and repeat it more frequently. I now use twelve grains every two weeks, but if the patient is eating well, and expectoration diminishing, one can wait whilst the system is being built up. Where the drug has been used for a long time, anæmia is apt to occur, especially if the dose is large, and it is prudent to use a preparation of iron between injections.

There are certain accessories to the injection, which it is wise to employ. After the first day acid phosp. dil. m x and strych. phosp. gr. 1-30 may be used until the end of the reaction. If the stomach will tolerate it Easton's formula may be employed; also, iodine, gr. ½, potass. iodid. gr. ¼, sp. vini rect. mxv every four hours, in half a tumbler of water, between meals.

I was induced to undertake these experiments in December, 1894, when a patient consulted me, who was suffering from tuberculosis of the astragalus and other parts about the ankle-joint. The patient declined to be operated on, and I suggested treatment by iodoform. I gave four injections during a year, and at the end of that time the recovery was so complete that the patient had a useful joint. In February, 1895, a similar case presented itself. The treatment was the same, and an equally good result was obtained. From these cases I gained the idea that there must be a constitutional as well as local reaction, the results were so marked.

In November, 1895, I began the subcutaneous injections of iodoform; but, as this was very painful, and apparently without result, I gave it up. The next case in which I had a chance to see its action was one of tubercular wrist joint with discharging sinus. I scraped away the fungoid granulations, and then injected the joint with iodoform, and retained it by plugging the opening of the sinus with iodoform gauze, and then covering it with Mead's plaster. The first injection was given November 8th, 1895, and by December 26th, 1895, the sinus had closed and the joint was well.

A case of tuberculosis of the hip-joint, with three sinuses and disease of the left apex, next presented itself. One sinus was utilized for injection, and the whole three were plugged as before, and covered with Mead's plaster. In a short time the disease of the lung

subsided, and the joint trouble slowly got well. After this case I was convinced of the constitutional action of iodoform.

Miss McK. came under treatment in July, 1903. It was a case of tubercular disease of tarsus and ankle-joint. Injections were given until July, 1904; by which time her joint had recovered. It was during this case that I noticed the effect of this drug on the tubercular disease in the relief of pain and also its effect on metabolism. The patient has remained in good health up to the present time.

Mrs. R. came to the Montreal Dispensary in June, 1904. She had had tuberculosis for nine years. She was expectorating about eight ounces of purulent fluid in the twenty-four hours, was much emaciated, and coughed night and day. It was a case of chronic fibro-caseous tuberculosis. The pulse was 96, the temperature 100. The idea occurred to me to inject the iodoform into a joint; for if it did no harm to a diseased joint, it could not affect a healthy one. She was injected June 30th in the left knee-joint with forty-eight grains of iodoform. The effect on the tubercular disease of the lung was marked. The cough was eased, expectoration diminished, and by June, 1905, she had stopped coughing. The case will be referred to later.

The next case, Mrs. L., came to the Montreal Dispensary in September, 1904, with tubercular disease of the left shoulder-joint, and the skin below it. It was during this case that I found out the method that I am using at the present time, and also, was able to observe the action of iodoform on the tubercular disease of the skin.

Before proceeding to the recital of cases I shall refer to certain observations which I have made upon the effect of iodine given in the form of iodoform hypodermically upon metabolism and upon diseased tissue.

Action of Iodoform on the Tubercle.

There is a rise of temperature in the first twelve hours, and by twenty-four hours one notices a yellow spot in the centre of the tubercle, and almost complete depletion of the inflammatory products in the skin around the tubercle. The skin becomes soft and pliable. By the end of four days the yellow spot becomes a crust, is absorbed or falls out and leaves a small ulcer, which soon heals over and eventually bleaches out as scar tissue.

When there is an open sore, as in the case of Mrs. L., where there were three tubercular ulcers, about the same size, two of which were gouged out, with unhealthy bases, and the other with a membrane around its edges, the changes during the first twenty-four hours were marked. The skin round the ulcers showed almost complete depletion

of all the inflammatory products, and became soft and pliable. The base of the ulcers was dry, and had almost come up to a level with the skin. The ulcers had lost their crater-like appearance. During the following four or five days there was a discharge from them. The granulations became healthier, the ulcers got smaller, and the two without membrane closed by the end of the fourteenth day. The membrane remained on the latter until it was almost closed. During the early stage of healing there were a great many fine blood vessels piercing the membrane. The base of the ulcer went through the same process of healing, only the course was slower. The membrane remained on for fourteen days, and by the twenty-first day the ulcer was completely healed. When the ulcer does not heal by the twenty-first day, it apparently gets just as bad as ever if not followed by another injection.

Action on the Blood.

There is a leukocytosis. The increase corresponds to the dose of the iodoform injected, and the severity of the reaction. I have plotted out a chart showing the rise of leukocytes with the rise of temperature There is not much change from normal in the ratio of the different kind of leukocytes. The counts have shown about 80 per cent. polynuclear, and 20 per cent. mononuclear. The hæmoglobin is not changed, but is diminished if the dose is large and continued for a long time. The red blood cells remain the same.

Action on the Urine.

In tubercular subjects, especially of the lungs, the urine is always scant. Below I have a chart for eight days during the reaction.

	Day before inject'n	Injection.	3rd day	4th day	5th day	6th day	7th day	8th day
Amt. of urine in cc.	600	850·	650·	890	900	600	525	720
Specific gravity....	1025	1024	1025	1025	1023	1024	1032	1027
Amount of solids in grammes	58·25	55·92	58·92	58·92	53·59	55·92	74·56	62·91
No. of grammes in 1 cc. of urine	023	·022	·019	·020	·021	·021	·025	·018
Amount of urea in 24 hours	13·18	18·70	12·35	17·40	18·90	18·00	13·12	12·96

Action on Metabolism.

About the second week after the injection the appetite becomes increased. As time goes on the general vigour is increased and the effect of the injection may last for months, the patient putting on flesh and getting quite strong, although the disease is not completely eradicated.

Action on the Circulation.

The pulse becomes slower and stronger. There is a fall in blood pressure. The greater the dose the greater the fall, and the longer it takes to return to its previous condition.

Action on Temperature.

In pulmonary cases there is a rise in temperature according to the dose, which lasts from four to seven days, and subsides leaving a normal or reduced temperature. In other forms of tuberculosis, the rise of temperature does not last so long.

Cases that have been Treated.

Joint Tuberculosis—Case I.—Mrs. R. Family history of tuberculosis; complained of pain in the right hip-joint for five years. One year ago an abscess formed on the outside of the right leg; and opened about two inches below the great trochanter. After treatment it healed; but on July 1st, 1905, the swelling reformed in the same place, and was accompanied with pain, lameness, fixation of the joint, fever Sinus was injected with 10 per cent. iodoform solution, and plugged with iodoform gauze, and then covered with Mead's plaster. The cavity was injected every fourth day up to August 10th, and at longer intervals up to August 26th. By August 31st the sinus closed. There was no pain or lameness and the patient was able to use her joint. She was put on syr. ferri phosp. co., and a solution of iodine. After three months the joint had recovered.

Case II.—James L., aged 6 years, complained of disease of the right hip-joint for the last six months, great pain day and night and swelling of the joint. There was a difference of one inch in length of the legs, and evidence of deep fluctuation, and fixation of the joint. He was treated by extension, and tonics in the hospital, but, as he was steadily growing worse, he was removed to his home, and came under the present treatment. He was injected August 3rd, 1904, forty-eight grains of iodoform being given. There was a severe reaction

followed by complete relief from pain, and the swelling in the joint went down. He did very well until he developed pleurisy September 18th, 1904. The pleurisy persisted, and patient began to run down, and have sweats. The pain and swelling returned in his joint. On October 18th he was injected. There was a great change for the better. The fluid rapidly disappeared. The pain left the leg and the swelling diminished. By November 10th the chest was free. November 15th, injected again, and on examination the joint was freely moveable and very little swelling. On January 14th he received another injection, and was so well after it that the extension weight was removed. There was no pain or swelling. On January 24th patient had an attack of dysentery. The dysentery was so severe that it practically caused his death. It lowered his resistance, and he died of general tuberculosis. It seems that there is a susceptibility to colitis after a number of injections, especially if the dose is large.

Another case reported in the earlier part of this paper, Mrs. R., died in the same way after she had practically stopped coughing. In all cases it would be advisable that the abdomen be well protected. I think I might have saved the above case, if I had given a small injection after the acute symptoms had passed off. This was well seen in a case of phthisis, which was injected by the knee method. The knee remained swollen; but after an injection in the shoulder, the swelling disappeared during the first twenty-four hours showing the action of iodoform on inflammatory tissue. Since the above case I have been successful in treating a similar one by using a small injection.

Tubercular Glands.

Case III.—Miss E. D., aged 10 years, complained of enlargement of cervical glands on both sides. The adenitis, began November, 1903, and continued to increase up to the time of treatment. Patient had one sister who died after operation on tubercular glands. On May 16th, 1905, patient was injected in the usual way, with twenty-four grains. There was a very marked improvement. The majority of the glands disappeared within the first week. There was the usual febrile reaction. During that time patient was kept in bed on light diet. When temperature was normal, she was allowed up, and given full diet. As there were still some glands enlarged on both sides, she was injected July 9th, 1905, with still further diminuation. After the glands got down to a very small size they were slow to disappear, so she was injected August 12th and September 26th. After the last injection the glands had returned to their normal size. Examined

October 28th, patient was in good health and both sides of the neck were normal in appearance.

Tuberculosis of the Skin.

Miss J. M., aged 34 years, came to the Montreal Dispensary, May 23rd, 1905, and was referred to me by Dr. J. M. Jack, to whom I am indebted for having so patiently followed this case as well as several others.

Patient had an eruption on her nose and face, which began nine years ago. During that time she had a varied treatment, including the Finsen light, and X-rays for four months without benefit. The skin lesion was on the right temple, both cheeks and nose. There was some loss of tissue of the left nostril and some scarring on the right cheek. The skin was raised, indurated, and here and there a yellow spot appeared on which a crust had formed. She received her first injection of twenty-four grains on May 29th, 1905. By June 1st a change in the diseased area had taken place. The skin had become soft and pliable. There were numerous small yellow spots. These were tubercles which, upon microscopic examination, showed that they had undergone fatty degeneration in the centre. By June 5th the redness in the skin and induration were much less, and the yellow spots were beginning to dry up, and by June 11th were all absorbed. In some places the tissue began to whiten out. Before the second injection, June 12th, one or two tubercles underwent resolution, but after it a great many more were acted on. The area of diseased tissue steadily decreased. After the third injection only a few tubercles were acted on. She was injected July 31st, October 30th, and November 27th. Following each treatment the induration steadily diminished, and a few tubercules underwent resolution. As the tubercles disappeared the skin became paler and finally white scar tissue remained. At present time, February 16th, 1906, the disease is practically eradicated.

Case V.—Mr. C., came to the Montreal Dispensary and was referred to me for treatment by Dr. J. M. Jack. He complained of cough, loss of flesh and expectoration of purulent character, and numerous small ulcers on the right shoulder joint, which had been increasing in area during the last five years. There was no history of lues. Consolidation in right apex of lung. Skin on the right shoulder was raised, indurated, and here and there were numerous small ulcers, one as large as a fifty-cent piece. These ulcers had a crater-like appearance with overhanging edges and unhealthy base. Some of them

were covered with white membrane. He was injected September 19th. By Saturday, September 23rd, sores were all healing and were undergoing changes already described. By September 27th ulcers were all healed. There were a few tubercles left on the top of the shoulder. He was unable to take second injection. He returned January 4th, 1906, and reported that his cough had left him and that he had gained five pounds. The skin of the arm had broken down where the tubercles were left after first injection, also, a spot on the back of the neck. He was injected, and when seen January 10th the ulcers had healed again, and the skin had become soft and pliable. In a spot on the back of the neck the tubercles were seen to have undergone the usual change. He was injected January 26th, and at present, February 10th, 1906, skin lesion is healed.

Case VI.—Ernest L. came to the Montreal Dispensary, April 28th, 1905, complaining of a skin disease of several years duration, cough, purulent expectoration, and emaciation. There were three ulcers, one on arm, one on forearm, and one on back of right hand, near ulnar side. They were typical tubercular ulcers. For the last seven years there has been a certain amount of healing and then breaking down.

On examination of lungs dulness in right supraclavicular and infraclavicular regions was found, broncho-vesicular breathing, and submucous rales. Sputum contained tubercle bacilli.

April 29th injected with iodoform gr. xxiv. There was a marked change in the ulcers. All three took on a healthy action. He was injected May 18th, and June 28th, 1905. After the last injection the sore on upper arm and forearm had healed completely. The one on the back of the hand was practically healed, only a few tubercles being left. The cough had almost ceased and patient's general health was very much better. He did not appear for treatment again.

Tuberculosis of the Lungs.

Case VII.—Mrs. K., aged 30, came to the Montreal Dispensary, March, 1905, complaining of cough, difficulty in deglutition, a hoarseness and rapid loss of flesh.

Family History.—Two sisters have died of consumption. Present illness began three years ago, December, 1902, with slight cough followed by a hæmorrhage from the lungs. During the winter patient had a hoarseness, cough and expectoration, but when the summer came the hoarseness cleared up. The cough continued up to October, 1904, when patient caught a severe cold. Cough got worse, and hoarseness returned. The patient at this time was pregnant, and was confined

January 30th, 1905. During the latter months of pregnancy the cough and hoarseness increased and, owing to painful deglutition, emaciation was rapid.

Her weight in good health was 170 lbs. and at the time of her injection was 112 lbs. Larynx was injected, mucous membrane swollen, especially over arytenoid cartilages, also granulomata on both vocal cords. Thick tenacious sputa was on the trachea and on ary-epiglottidian fold.

Lungs—Dulness in left supra- and infra-clavicular regions extending down to the third rib, prolonged expiration, broncho-vesicular breathing and numerous subcrepitant rales. *Back*—Dulness in spura- and infra-clavicular regions, broncho-vesicular breathing, and numerous rales, subscrepitant rales, temperature was 100; pulse, 96.

Dr. Williams reported tubercle bacilli in the sputa.

On March 25th, 1905, first injection was given, amount 24 grains. Examined April 1st, temperature was 99. Larynx showed signs of improvement, swelling of the mucous membrane diminished, granulomata were smaller, hoarseness less and no pain. During the first twenty-four hours after an injection the expectoration became less, the breathing softer, all pain disappeared and cough was easy and less frequent. On the second day the rales returned, expectoration was increased, and continued up to the fifth day, when it again diminished. The patient began to eat well and felt stronger. She was injected April 26th, June 6th, June 20th, July 4th, August 11th, October 17th, November 6th, December 2nd, and January 23rd, 1906. In the last three injections she received only twelve grains. There has been a steady diminution of the sputa and cough. At the present time she only coughs a few times in the morning. There is not much to be made out on examination of the lungs, only slight roughening of breathing, larynx slight redness. Her weight has increased from 112 lbs. to 125 lbs. Her appetite is good. She sleeps well, and has done her own work for some time. She has taken, latterly, iodine gr. ½, every four hours, between injections, also, Easton's formula, and an inhalation of tinct. iodine, acidi carbolic in sp. vin rect and ether,

Case VIII.—A. H., aged 28 years, came under treatment June 8th, 1905. At that time he complained of being run down, hoarseness, cough in the morning, and through the day for the last year, expectoration of a greenish character, losing flesh. Weight in good health 170 lbs, now 150 lbs. Cough and hoarseness much worse during last two weeks. Mother and one brother, also uncles on father's and

mother's side, all died of phthisis. In sputum numerous tubercle bacilli were found.

Lungs—Softening in the left apex. *Larynx*—Granuloma obliterating the left vocal cord, and swelling of the mucous membrane, especially over the arytenoid cartilages.

He was injected with 24 grains, and was sent to the country after two days rest, but returned June 30th, for another injection. He has been injected July 28th, August 13th, September 13th, September 28th and October 13th. About two weeks after the last injection he had an attack of acute dysenteric colitis. He was treated with injections of pot. permang. gr. ⅛ to the ounce, using about a quart of the solution, also, took bismuth subgallate gr. x, every four hours. The attack was very severe, and pulled the patient down. It did not stop until after injection December 1st, 1905. Injections were given him December 1st, December 15th, 1905; January 6th and February 3rd, 1906. During these months, notwithstanding the dysentery, the granuloma slowly disappeared, and at the present time the left vocal cord has almost bleached out. The lungs are practically normal, only roughening of breathing.

About December 1st, 1905, Dr. Birkett kindly consented to examine the patient's larynx and to follow the treatment. The larynx was examined Thursday, February 15th, and found to be almost healed.

Case IX.—Miss M. N., age 23, came for treatment July 1st, 1905. She complained of headache, emaciation, cough day and night, followed by expectoration of a purulent character. Family history—One sister died of consumption. Present illness began three years ago, with slight cough in the morning. One month and a half ago she began to cough day and night, loose flesh and expectorate about two ounces of purulent sputa in twenty-four hours.

Lungs.—Dulness in supra—and infraclavicular regions, broncho-vesicular breathing and numerous rales. Behind—dulness in supra—and infraclavicular regions, broncho-vesicular breathing and subcrepitant rales. Pulse was 84, temperature 100.

Patient went to St. Agathe for a month, and on her return her cough was more troublesome, expectoration profuse and marked increase in the physical signs, weight 90 lbs.

She was injected September 19th with 24 grains, followed by marked improvement, especially great relief to her cough, which was only in the morning. She was put on iodine gr. one quarter and Easton's syrup. She has been injected twice since. Expectoration has ceased and her

weight is increasing. *Lungs*—no dulness or rales, only slight roughening of the breathing.

Case X.—J. H., age 22, came under treatment August 14th 1904. He had been coughing and expectorating for seven years. At time of examination cough was troublesome, and expectoration was profuse and purulent. There was marked emaciation, and a chronic purulent notitis media.

Lungs.—Softening in the left apex. Patient was put on iodine gr. one half three times a day and cod-liver oil and sent home to the country. At home he had an attack of pleurisy, which seemed to get worse steadily, so he returned to the city.

Lungs.—Marked softening in the left apex. Fluid in the left base, and an asthmatic bronchitis. Heart enlarged. Pulse 84, temperature 98. Finger nails were blue. He was emaciated, and suffered much from dyspnœa. Patient was injected with 24 grains, and sent home. His cough improved and he slowly gained in weight. Since that time he has only received 8 grains, as after twenty-four grains it took too long to pick up, owing to the fall in blood pressure and a weak heart. The disease has slowly yielded. The last injection was given January 3rd 1906. After it the patient picked up and had a good appetite. The condition in the lung improved. Dulness has disappeared from the apex, and there were only a few rales in the base. He was put on iodine gr. one half, every four hours and Easton's syrup and went back to the country. Latest report is that his ear has stopped running, and that he was able to eat well, and had only very little cough.

Case XI.—Mrs. C., age 24, came to the Montreal Dispensary September, 23rd, 1904, She complained of emaciation and cough, followed by purulent expectoration, and hæmorrhage from the lungs. The weight was 144 lbs. About six months ago she began to cough, and expectorate. Two months ago she had a hæmorrhage from the lungs, which lasted for one week. Since that time cough and expectoration have increased. Sputum contained tubercle bacilli. Patient had two sisters who died of consumption, and one has been treated by this method.

Lungs—softening of the left apex. She was put on iodine gr. one-half every four hours and Easton's syrup. Cough stopped October 11th, 1905. Examined January 9th, 1906, in good health and lungs are perfectly normal. Weight 144 lbs. There was no injection in this case, and the results I attribute in part to the iodine.

Case XII.—Mr. M., age 20, came under treatment January 1st, 1906. He complained of cough, followed by expectoration, emaciation

and hæmorrhage. Last August, 1905, had a slight hæmorrhage from the lungs; since that time has been coughing and expectorating. On January 1st, 1906, had a severe hæmorrhage from the lungs. Temperature was 102; pulse, 108.

Lungs—Softening in the left apex. Injected with 12 grains January 6th, 1906. Cough almost ceased; appetite was good. He was put on iodine gr. one half every four hours and Easton's formula. Examined February 8th, coughs a few times in the morning. *Lungs*—only slight roughening of the breathing in the supraclavicular region.

Three cavity cases have been treated by this method. They all died—two of septic pneumonia and the other of heart failure. These cases were all septic. Both the streptococcus and tubercle bacilli were found in the sputa. The second case, Mr. S., was treated with antistreptococcic serum with reduction of temperature at the end.

Case XIII.—The last case, Mrs. B., age 25, came under treatment August 4th 1905, with active disease, a cavity in right apex, and one in left upper lobe about the third rib. Temperature running up to 103, and pulse 96 to 108. Tubercular diarrhœa. She received several injections and always with benefit, but as there was streptococcic infection the disease progressed. After treatment for a time with iodoform, streptococci serum was used, and by November 1st, 1905, her temperature became normal and her diarrhoea stopped. It was noticed toward the last that a combination treatment gave the best results. In treating the above cases the dose of iodoform was too large, and too far apart, and the patients were not kept at rest.

I have two cavity cases at present under treatment. They are receiving small injections often, from seven to twelve days, and iodine gr. one half every four hours after the reaction is over. They are slowly progressing.

The feeding and the care of the patient are carried out after latest methods, by fresh eggs, fats and fresh air.

Tuberculosis of the Bowels.

Case XIV.—Mr. B., came under treatment November 1st, 1905, with cough, purulent expectoration, fever and diarrhoea. Patient had a tubercular diarrhœa for two years.

Lungs—Cavity in right apex. Patient was very weak and having between five and seven stools a day.

He has been injected with 8 grains every twelve days, and iodine gr. one half every four hours after the reaction is over. His diarrhœa

has steadily diminished, also fever and expectoration. By December 1st, 1905, he was only having one stool a day, which has continued up to the present time. He is now on full diet and is gaining in weight. He has been kept at perfect rest in bed.

If in advanced cavity cases, after an injection, there is a steady improvement, it is better to wait until the patient's condition is stationary before giving another injection. The improvement of the general health is most important.

OSTEOMYELITIS — WITH ESPECIAL REFERENCE TO ITS TREATMENT.

BY

A. E. GARROW, M.D.

No plea, I think, is necessary for bringing the subject of Osteomyelitis before the members of this Society. It is a disease which merits the careful attention of the general practitioner, who, as a rule, has the first opportunity of studying the case, and may experience considerable difficulty in arriving at a correct diagnosis, while the surgeon's resources may be tried to the full in bringing the treatment to a successful issue.

In discussing the symptomatology and pathology, I shall practically limit myself to infective osteomyelitis; whereas, in the treatment, reference will be made to the healing of cavities in bone, arising from other causes than suppuration.

The term "osteomyelitis" is not limited to inflammation of the marrow of long bones, in which it sooner or later extends into the osseous lmellæ surrounding it, but is also applicable to a similar process beginning in the cancellous tissue of irregular bones, such as the os calcis, and in the diploic tissue lying between the tables of the skull bones.

Infective osteomyelitis may be defined as an acute, suppurative inflammation beginning in the bone marrow, and due to pyogenic microorganisms. This disease is especially common in childhood and adolescence, becoming less and less so as the bones reach full development. Multiple infective osteomyelitis may develop at an advanced age, as recorded by Bottomley. It is much more common in boys than in girls; slight contusions, strain of the ligaments and tendons

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inserted at or near the epiphyseal line, exposure to cold and wet, are undoubtedly predisposing factors.

The *rôle* played in infectious diseases and the exanthemata is at present a subject of pathological discussion. With some, measles, scarlet fever, and small-pox are looked upon as predisposing factors, lowering the general resistance, and thus allowing streptococci and staphylococci circulating in the blood, to gain a foothold in the bone. Areas of necrosis are frequently present in the bone-marrow, a suitable nidus for bacterial growth, both in small-pox and in typhoid fever. In typhoid fever, as well as pneumonia, there is indubitable bacteriological evidence to show that these organisms are not only pathogenic, but also pyogenic.

Fränkel, in his extensive studies on the changes in the bone-marrow in acute infectious diseases, has made clear to us what had been the source of much speculation,—the origin of infection in obscure cases of suppurative osteomyelitis. This investigator has shown that distinct inflammatory changes are present in the bone-marrow in infectious disease, and are due to the same infective agent that produced the general disease, and also that this localization of bacteria does not always produce sufficient reaction in the bone-marrow to be recognized clinically, even when the patient recovers; nevertheless such focal collections, although they may remain quiescent for long periods of time, become active pathologically when the tissue harbouring them has been irritated or been subjected to trauma. Undoubtedly, in the majority of cases, bacteria so deposited in the bone-marrow are destroyed.

Keen, in 1898, pointed out the development of osteomyelitis "at very long periods after the original attack of typhoid fever," in which pure cultures of the typhoid bacillus were obtained from the pus, and refers to such a case reported by Buschke, where seven years had elapsed before the development of the bone disease. The author expressed himself at that time as follows: "Instances showing the accumulation of the bacilli in the bones and their persistence for months and even years after the fever, explain the otherwise curious fact that the cases of periostitis, osteomyelitis and abscesses in bones occur at such long periods after the fever, and so much later than most of the other surgical complications and sequels of typhoid. Why in some cases . . . . though the bacilli are present, they do not produce any of these disorders of the bone, we do not know. Probably it is due to the fact that the general health is such that their deleterious tendency and influences are successfully vanquished."

Bloodgood, in a recent *resumé* of the literature on this subject, draws

attention to the analogy between such bone inflammations and gall-bladder infections with stone formation, following pneumonia, typhoid fever, and influenza, and points out that, in the majority of cases, the primary invasion of the gall-bladder is not associated with clinical symptoms, and that recent observations suggest that infection of the lymphoid tissue in the appendix during infectious diseases may be the first etiological factor in appendicitis.

In the light of such knowledge, there is no specific virus causing osteomyelitis, since it may arise from a variety of organisms.

The straphylococcus pyogenes aureus is the organism most frequently present, and produces the most typical and extensive forms of bony destruction. The original focus may be a furuncle or a carbuncle.

Rarely the streptococcus is the causative agent, and when present it seems to show a predilection for the joints and periosteum, producing both joint and epiphyseal inflammation, frequently with a separation of the latter. This form of infection is prone to occur in young children, secondary to a phlegmon or erysipelas.

The pneumococcus, like the streptococcus, attacks the joint or superficial bone.

The typhoid bacillus, in pure culture, causes less extensive lesions than when a mixed infection is present.

When open sinuses exist a variety of bacteria may be present, and mixed infection is the rule. The colon bacillus, the bacillus pyocyaneus and the bacillus fetidus, have been isolated from old cavities.

Rare anäerobic bacilli, in pure cultures, may be the sole cause of infection.

Lexer has shown that the circulation in the long bones is supplied by three different sets of vessels which do not anastomose with one another.

The single nutrient artery, which in the femur is double, with a small communicating branch, bifurcates when it enters the shaft, and pursues its course upwards and downwards, ending at or near the epiphyses as fine terminal branches.

A varying number of small, short trunks, which enter the shaft near the epiphysis, perforate occasionally the cartilage and end as terminal arteries in the epiphysis.

The epiphyseal vessels, which enter the epiphysis from all sides, run towards the bone nucleus. Some of these turn and extend towards the joint cartilage, while others run towards the epiphyseal line.

It will thus be seen that the epiphysis derives its blood from all the branches.

Further, the same author has shown that this distribution can be demonstrated up to the period of complete bony development, when it is noted that the vessels of the shaft become relatively smaller than those entering the extremities; while the joint vessels become distinctly enlarged. He believes that these changes account for the relative frequency of epiphyseal infection in children and of joint infection in adults. He also believes that the situation of inflammatory foci in the bone is dependent entirely on the size of the embolus. When large it becomes arrested near the entrance of the nutrient artery, while the finer emboli are able to proceed to the terminal branches near the epiphysis.

This relation of infective localization to particular arterial branches, has been demonstrated both experimentally and clinically; for instance, in the head of the femur the primary focus of tuberculous disease is situated at the insertion of the ligamentum teres, or at a point just above or just below; and these three places correspond accurately to the entrance of epiphyseal arteries, as shown by Lexer's method of injecting the arteries of the bone.

Tuberculous and infective osteomyelitis are comparatively common in the shaft of short pipe bones, such as the phalanges; whereas it is relatively rare in the long bones. Lexer explains this apparent inconsistency by demonstrating that the diaphyseal arteries in such short bones are distinctly larger than the epiphyseal vessels; whereas in the long bones the opposite condition obtains. Whether the alterations in the relative size of the blood-vessels at the period of complete bony development is the cause or not, clinical experience teaches us that primary osteomyelitis is rare after that period, the majority of cases occurring in adult life being recurrent attacks.

When an infective process originates at or near the epiphyseal end of the shaft, its usual situation, it spreads rapidly along the marrow, producing areas of necrosis and cellular infiltrations, which rapidly degenerate into pus. The blood supply within the unyielding bone is quickly arrested and the endosteal layer of compact bone ceases to be nourished. Through the intercommunicating bone-cells and Haversian system the infective agent may reach the inner surface of the periosteum, which soon becomes separated from the cortical surface, cutting off the blood supply to the outer layer of the shaft. According to the virulence of the infection, the resisting power of the patient, as well as the stage of bone development, the results will vary. There

may be a central bone abscess, with slight or extensive central necrosis; or the whole shaft, for a variable extent, may undergo complete destruction. Should the patient survive, an abscess will develop in the soft tissue, which may rupture and continue to discharge pus and sequestra for years.

So soon as drainage is established, either naturally or by surgical interference, reparative processes begin, both in the endosteal and the periosteal tissue. The osteogenetic layer of periosteum rapidly proliferates and produces a new layer of bone, which may take the form of long splints or ensheathing tubes, corresponding to the extent of cortical destruction.

If the peptonizing action of bacterial and inflammatory products were capable of rapidly dissolving or breaking up and separating the dead bone, as it does the slough in similar infections in the soft tissues, the rapid proliferation of the endosteal and periosteal tissues, with its subsequent transformation into osteoid and fully developed bone, would soon repair the injury inflicted and restore the bone to an almost normal condition. The presence of the sequestrum, separating these actively proliferating tissues, prevents their union at a time when repair could be made perfect. Even in total necrosis, when the sequestrum is removed early, the periosteum alone is able to produce an almost perfect anatomical shaft.

But, under ordinary circumstances, when nature has finally disposed of the dead product, or it has been tardily removed by the surgeon, the activity of the regenerating tissues is arrested by its more or less complete transformation into bone, and the resulting cavity in it is lined with a layer of granulation tissue, which possesses but little of its original regenerative activity; besides becoming the home of numerous pyogenic organisms, which, from time to time, acquire increased virulency and light up fresh inflammation, leading to further destruction of bone, or else by acting as an irritant lead to sclerosis of the newly formed involucrum.

Infective osteomyelitis, as a rule, begins with sudden local pain, throbbing in character and increasing gradually in severity. The situation is usually near the end of one of the long bones. The pain is increased on pressure or jarring the limb. Swelling of the soft parts soon follow. The surface becomes reddened and pits on pressure. The contiguous joint becomes swollen, contains increased fluid, though cultures secured by aspiration of the joint remain sterile. Later, in the course of the disease, suppurative arthritis may supervene. The constitutional disturbance is prompt and indicative of

infection, and is in direct proportion to the virulence and extent of bone involved. There is usually marked leucocytosis.

With such a symptom-complex one would not expect much difficulty in making a diagnosis; but, owing to marked variations in the onset, course and severity of the local and constitutional symptoms, mistakes are frequently made. For instance, the pain may be slight, or even absent, or at least not complained of in a dull or delirious patient. The first evidence of local trouble that may be recognized in children is a swollen joint, making it impossible to differentiate an arthritis from an infective osteomyelitis. A patient may even die of acute multiple osteomyelitis without any local signs of its presence, and a post-mortem fail to show the cause of death, unless the bones are examined. The diseases which are usually mistaken for osteomyelitis are typhoid fever, articular rheumatism and gonorrhœal or acute-tubercular arthritis. In rheumatism and the various forms of synovitis the pain is primarily in the joint and more than one may be involved. Bone tenderness follows the joint infection.

A Widal reaction and the absence of leucocytosis would suggest typhoid fever.

As a rule, surgeons have treated acute infection of the marrow by making a free incision down to the bone, trephining through the shell, enlarging this opening upward and downwards, by means of chisel and gouge, as far as may be required, curetting away all infected material from within the shaft, and draining. If the area was small, such treatment was often successful; if very extensive, a cavity was left, which frequently failed to fill up, and gave rise to a persistent sinus. In cases with entensive necrosis the rule was to wait until the sequestrum had separated from the living bone. In the meantime, a rigid involucrum formed, and when sequestrotomy was performed, a large cavity was left, which persisted often for life, and in many cases the limb was sacrificed.

Surgeons have employed various methods to assist nature in closing the cavity. As a rule aseptic organic substances have been used to act as a framework for connective tissue growth, hoping that osteoid, and later, fully developed bone would replace it, in the process of repair. In many cases these methods have proved successful. Schede's blood-clot, Neuber's approximated skin-flap, Hamilton's sponge grafts, Senn's decalcified bone chips, iodoform and wax or paraffin preparations have all been used with success. Even attempts have been made to fill the cavities with a variety of foreign substances, such as glass, ivory,

celluloid, gold foil, etc.; but satisfactory results were obtained only in exceptional cases.

In certain situations osteoplastic bone-flaps have proved of service in obliterating these cavities.

Nichols, of Boston, has probably made the most important contribution to our knowledge of the treatment of osteomyelitis in its various stages, within recent years, by drawing our attention to the importance of saving the endosteal tissue in the acute stages, while providing for drainage, and of early artificial separation of the sequestrum, or rather, necrosed bone in the subacute cases.

In the acute stage he advises early opening of the bone with a trephine, enlarging this upwards and downwards as far as evidence of bone infection can be demonstrated; but on no account to curette; simply drain and wait. If sufficient endosteal tissue is thus preserved, rapid repair and filling up of the cavity may take place. If not, and central necrosis has occurred, the treatment necessary for the chronic stage is to be employed.

In the subacute stage he advises removing the dead and dying bone at a time when the actively proliferating periosteum is about 1-16 of an inch in thickness. This may be recognized by passing a needle through it, noting when the crackling sensation, due to the passage of the needle through the osteoid tissue, is first felt, and then when it is arrested by coming in contact with the dead bone; or else, remove a small portion of the periosteum at the edge of one of the openings, and estimate its thickness by the microscope. The periosteum has usually acquired this thickness in about eight weeks from the time drainage was established, and though somewhat stiff, is pliable and capable of retaining the shape into which it may be folded.

When the disease has involved one of two parallel bones, he chooses this time to perform sequestrotomy. The periosteum is carefully stripped from the bone, throughout its diseased area, the latter cut through both above and below, taking care that the section is in healthy bone. In cases of necrosis involving the whole shaft, the separation takes place at the epiphyseal line. The interior of the periosteal shell is sponged, infected looking areas may require curetting, and, after thorough sponging, is swabbed with carbolic acid and alcohol, or other antiseptics, bleeding carefully arrested, and is then folded ribbonwise, sutured at the edges along its entire extent, the overlying soft tissues closed, and drainage provided from the interior of the periosteum in several places; but particularly at the lower end.[1]

[1] Note method of making conical section to avoid dead spaces.

To prevent the formation of a "dead space," Nichols advises cutting the upper end of the bone wedge-shaped—with the apex pointing downwards.

This method has been successful in many cases in securing an almost perfect anatomical shaft; the limb being capable of performing its function perfectly.

In 1897 I removed the entire shaft of the tibia, in a young lad (specimen shown), by the method just described. Healing took place rapidly, and when last seen, there was little to indicate, on examination, that he was the possessor of a second tibia in that limb.

In cases where there is but one bone, as in the humerus, the danger of deformity from muscular contraction must be thought of, before removing the supporting and rigid sequestrum. If allowed to remain too long, the periosteal tube becomes rigid and dense and has very little or no power of repair centrally. Here he advises waiting for about 16 weeks. An incision is made down to the periosteal shell, which is sufficiently opened up to enable the surgeon to extract the necrotic bone. This latter procedure may be comparatively simple or very difficult, according to the extent of necrosis. He endeavours to injure the periosteal tube as little as possible, crushing the necrosed bone, if necessary, to facilitate its removal. The resulting cavity is disinfected, the skin incision closed, drainage at the lowest point. Fixation must be employed to prevent yielding of the bone to muscular action or to gravity. The process of repair is slower than when the dead bone is removed earlier, but infinitely more rapid and more successful than when the sequestrum is removed at very much later periods.

In the chronic stage, with an old necrotic shaft usually worm-eaten and perforated with sinuses, enclosed by a shell of dense periosteal and often sclerosed bone, a condition so frequently met with in hospital practice, Nichols advises a similar method to that employed in the subacute stage, but in addition to removing the dead bone he excises a corresponding portion of the newly formed involucrum and then folds the surrounding periosteum as before. He thus succeeded partially in obliterating the cavity in one case reported.

This method cannot be applied to a large class of cases in which the cavity not only involves the shaft but also the epiphysis, cases which have been repeatedly curetted and packed with gauze until both the surgeon's patience as well as the patient's have been exhausted.

Three years ago I had an opportunity in Vienna of seeing Mosetig-Moorhof's results in the treatment of such cavities and in cavities situated elsewhere, especially of tuberculous origin.

In this method success is dependent on securing an aseptic condition of the cavity. For this purpose its roof should be thoroughly removed, preserving carefully the periosteum, the cavity itself thoroughly curetted and dense endosteal bone chiseled or gouged out, the cavity swabbed with carbolic acid and alcohol, thoroughly dried and filled with a preparation of melted and sterilized iodoform, cetaceum and oil of sesame. When the mixture becomes firm the periosteum and soft tissues are sutured and drainage, if necessary, provided for. The operation should be performed by the bloodless technique.

My own experiences is that it is necessary in septic cases to curette the cavity and employ antiseptics several times at intervals of a week or less, packing the cavity with iodoform gauze during the intervals.

I have not found this necessary in the tuberculous cases in which the results are uniformly good if mixed infection is not present.

When treatment is successful the wound heals with but little local or constitutional reaction, fibrous tissue grows rapidly into the mass which is slowly absorbed.

I have noticed in some cases which were only partially successful that the material was gradually expelled in greater or less quantity, healing finally taking place, and in other cases where infection developed late, requiring recuretting that the amount of new material developed in 8 or 10 days was much greater than by any other method of treatment which I have employed.

Judging from my own experience, the most difficult cases are those involving the lower end of the femur with sinuses in the popliteal space. Here I have opened the bone in front and secured closure of the posterior sinuses before attempting to *"stop"* the cavity, and even then with but indifferent success, pus developing even as late as the 10th and 12th day, showing the difficulty in securing asepsis.

I have used this method with satisfactory results in the lower end of the radius, the phalanges, the greater trochanter and the upper end of the femur, and in the head of the tibia in filling cavities of tuberculous origin,and though frequently one to two ounces have been used, on no occasion has iodoform poisoning resulted.

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THE DEVELOPMENT OF THE KNOWLEDGE OF THE CIRCULATION.

BY

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"Life is short, and the Art long, the occasion fleeting, experience fallacious and judgment difficult." This, the aphorism of Hippocrates the father of medicine, expresses in few words the history of our knowledge of so universal a subject as the Circulation of Blood.

Since the dawn of humanity this fact has been ever present and it is only piecemeal, and through slow and interrupted stages that even our present knowledge has been reached, and what have even we, on whom the ends of the world are come, to show as the sum of our knowledge? Even yet we do not know the why or the wherefore of the heart's beating, and when the "golden bowl is broken," who of this wise age can make it whole again?

Our horizen is wider than that of our predecessors, because we stand upon their shoulders, but our vision is no clearer than theirs, and it may do us good to take a sketchy view of the stages by which we have come to such knowledge as we have, and of the men who carried higher the torch which they received.

Like the time when "the earth was without form and void, and darkness was upon the face of the deep," we can look back to the chaos of medical knowledge before the day of Hippocrates, when earth, air, fire and water were the elements known, and blood, phlegm, bile and black bile were the humours of the body, which, disordered in place or in amount were the cause of disease, and when health was regarded as the reward of Diety pleased, and illness the punishment by Diety offended.

Across this darkness, in 450 B. C., shone the light of the master mind of Hippocrates, the Asclepiad of Cos. He was above all things an observer and built his practices upon observation and not upon speculation. This was his great contribution to medicine, and though he accepted the prevalent views concerning the elements, and the humours, he did not slavishly follow these to the extinction of the evidences of the senses. Hippocrates knew much of the structure of the heart and its valves, and attributed life to the heat formed in the heart's interior and to the "pneuma" or spirit which came in with the breath.

Aristotle somewhat later amplified this conception of the use of the circulatory apparatus. To Aristotle, as to us, the heart was the cen-

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tral organ and prime mover in the life of the body, but while we look upon it as a muscle propelling blood through the blood vessels, to him it was the seat of vitality, where the blood was elaborated and endowed with animal heat. He compared the stomach and intestines to the soil into which the blood vessels dipped like the roots of a plant, sucking up thence the nourishment, which later in the heart was changed into blood, but no such thing as a physical movement of the mass of the blood was suggested.

To the pulmonary artery and vein he ascribes a function different from that of the other vessels, namely, the conveying from the lungs to the heart of the "pneuma," or spiritus. This pneuma or vital spirits held a large place in the physiology of the time. It was not the air itself, but a vaporous ingredient derived therefrom, which, when mixed with blood, gave to it vitality and potency.

The cause of the heart's pulsation was by Aristotle regarded to be the ebullition of the liquids received from the digestive organs due to the innate heat of the heart. The element of fire, or principle of heat was the cause of all animal and chemical activity; warmth, motion, and fermentation were all manifestations, and thus its action upon the blood caused the passive movements of pulsation in the heart and the vessels attached to it.

Following Aristotle comes another name, that of Praxagoras, whose contribution to the advance of knowledge was the distinction between veins and arteries, to the latter of which only the quality of pulsation was attributed; but with this advance, he also is credited with the origin of the idea that the arteries carried air or pneuma alone, while the veins carried blood, and centuries later this mistake was still bequeathed from one generation to another.

The great school of Alexandria founded by the Greek Conquerer of that name, produced some time later two anatomists, Hierophilus and Erasistratus, after the former of whom is named the junction of the venous sinuses of the brain,—the Torcular Hierophili. They gave public human dissections and brought to light many facts hitherto unknown.

Hierophilus raised the conception of the brain's function from its lowly Hippocratic level as the source of the nasal secretion to that of the seat of conscious individuality, and organ of voluntary power.

This discovery called for a revision of the theory of the vital spirits, and Erasistratus recognised one spirit the "πνευμα ζωτικον" or vitrol spirits produced from inspired air, and sent from the left ventricle through the arteries. It was the cause of the heart beat and the pulse,

the source of heat and the direct agent in nutrition. The other the "πνευμα ψμχικον" or animal spirits which was elaborated in the ventricles of the brain and passing by the nerves was the cause of consciousness, perception and motion. Strange as it may seem this doctrine obtained even to the 16th and 17th century.

The Alexandrian School, also, well described the cardiac valves, but though their structure and evident function were known, they offered no hint of a circulation of the blood.

To the Alexandrians the diastole was the active phase of the heart, sucking into the right ventricle some blood for the nourishing of the lungs and into the left ventricle some "pneuma" for the arteries, the escape of which the valves were to prevent.

To sum up, the school at Alexandria furnished the body at large, on the one hand, with blood by the veins for its nutrition, and on the other, through the arteries with the "pneuma" as its controlling force, but acknowledged the possibility of anastomosis between these channels, but this anastomosis was looked upon as pathological and undesirable rather than as a normal process.

About 130 A. D. a star of the first magnitude appeared in the medical firmament. Claudius Galen, who, as the culmination of the knowledge of the olden time, was also destined to be the preserver of medical science through the dark ages. He was the logical successor of Hippocrates, and like the Father of Medicine steered from the hair splitting disputations of many of his contemporaries, toward a rational system founded upon observation.

The doctrine of Erasistratus that the arteries contained pneuma or spirits and the veins blood, had been held for centuries, even in the face of haemorrhage from a wounded artery, and all the ingenuity of scholars was employed in explaining the presence there of a fluid which rightly belonged in the veins. The arguments to them were the difference in the structure of the two vessels, and the pulsation in the arteries, supposed only to be a function of the vital spirits.

But Galen with the spirit of his latter day prototype, John Hunter, whose motto was "Don't think! Try it," tested arteries of all kinds by making openings of all sizes in them, and in every case blood flowed out.

To quote his own translated words, "But why nature should have made two kinds of vessels to hold one kind of liquid, or how the spirits taken in by the breath can be transported through the body if the arteries are filled with blood, or how if the spirits be not so transported the pulse and voluntary motion can be preserved, all these are special

difficulties, proper to be investigated by themselves if regarded as matters of uncertainty. But they ought not to outweigh the direct testimony of visible phenomena."

Since Galen's views of the circulation were those to obtain until the 15th century it may be well to summarize them here.

The liver was the central blood forming organ; here blood was formed from chyle and here all veins arose; the pulmonary artery or vena arterialis was part of the venous system and like the other veins carried dark thick blood.

The arterial blood was lighter in colour, and spirituous, and as the veins arose from the liver the arteries came from the heart, and there obtained their heat and pulsatile force.

This pulsatile force was one of active expansion, resembling inspiration, by which blood was attracted, to be repelled in systole, thus keeping up a continual interchange of contents.

Out from the arteries passed to the skin excrementitious products, and by the arteria venalis or pulmonary vein, fuliginous vapours analogous to the smoke of combustion.

Galen accurately described the valves, but maintained that the closure of the tricuspid and mitral was incomplete, thus allowing some reflux in each direction.

But besides its mechanical action, the heart had a much more important one. It was the centre of organic life, the source and fire place of the innate heat by which the body was controlled.

The pulmonary vein received from the lung by openings too small to allow the escape of blood, the vital spirits and exhaled fuliginous vapours.

Though in some passages there are suggestions of a circulation, the general trend of his writings would indicate that he had in mind no such circulation as we conceive of, but rather such a mechanism as that by which pulsation in a vessel would draw the fluid from either direction and propel it toward every point.

He established the doctrine of anastomosis between terminal arteries and veins by opening an artery and bleeding the animal to death, when both veins and arteries were found empty.

Galen, also, left behind him the doctrine of the passage of blood through the interventricular septum which was for centuries to be accepted as an alternative to the circulation of the blood.

From the time of Galen until the 14th Century, his works were looked upon as Holy Writ, and most if not all, of the medicine, Grecian and Arabian, during the Dark Ages was a reflection from him. Even in the

13th and 14th centuries, when in Italy the glimmer of awakening learning became again visible, Galen was still the court of last resort in matters medical; and Mondinus and Carpi, the first two men who publicly attempted human dissection confined their attention to demonstrating Galen's doctrines.

But in the early years of the 16th century there came the Moses who was to lead the people out of their bondage to tradition into the freedom of independent investigation. He was not primarily a physiologist, but an anatomist.

Andreas Vesalius, a Belgian, who at the age of 28 issued from the printing press at Basle his epoch making work "De Fabrica Humanis Corporis" which is not only the foundation of modern scientific anatomy, but, in many points, remains to-day uncontradicted and unimproved.

Vesalius had a contract of sufficient magnitude on his hands to point out Galen's mistakes in structure, and to convince men of these on the evidence of their own eyesight, so that he made few attempts at interpreting functions and in the main was content to allow Galen's explanations to continue. But here and there he cannot refrain from a sarcastic comment. Galen's doctrine of the passage of blood through the interventicular septum he treats thus: "The septum of the ventricles, composed, as I have said, of the thickest substance of the heart abounds on both sides with little pits impressed in it. Of these pits, none, so far at least as can be seen by the senses, penetrate through from the right to the left ventricle, so that we are driven to wonder at the handiwork of the Almighty by means of which blood sweats from the right into the left ventricle through passages that escape human vision."

Vasalius' contribution to the knowledge of the circulation was the clearing away of the cobwebs of authority and tradition around the structure of the body, and in this way he opened the door through which, nearly a century later, Harvey would pass in and demonstrate the truths concerning function.

Between these two men there came in Italy certain others, each advancing knowledge a little farther One of these, Realdus Columbus, a pupil of Vesalius though a vain and in many ways an ignorant man, described probably for the first time correctly, the pulmonary circulation in a book published in 1559, there stating that the pulmonary veins carry not air but blood from the lungs to the heart and that it is in the lungs and not in the heart that the blood gets its bright red colour.

Some, however, claim that Columbus' discovery was not his at all, but was copied from Servetus, of whom, as one of the most interesting characters, in the history of medicine, we might say a few words.

He was born in Spain in 1510. At about 20 years of age he became prominant as a disputant upon theological subjects, and for a book "The errors of the Trinity," was denounced by both Catholics and Protestants.

His medical and physiological discourses are intermingled with metaphysical and theological discussions, and it is in his last book "The Restoration of Christianity," published in 1553, that he unexpectedly announces the modern doctrine of the passage of blood through the lungs.

For the heretical teachings of his book, both his book and himself were burned at the stake by the order of Calvin in Geneva.

One other name deserves mention as a builder of the house of knowledge, this was Hieronimus Fabricius, also of the Italian school, who discovered the existence of valves in the veins, but in terms of the learning of his time explained their function as retarding the blood from going pell mell down hill into the feet and hands and becoming impacted there.

While Fabricus was teaching at Padua, a young Englishman who had studied at Cambridge came as a student in medicine and carried back to London not only the friendship of the venerable Venetian professor but a most laudatory diploma from the Paduan University. This Englishman, William Harvey, became a member of the College of Physicians and settled in practice in London. He became Lumleian lecturer to the College, and physician to Charles First, whose fortunes he followed through the Civil War.

It was in his first year as lecturer to the College, in 1616, that he set forth his discovery of the circulation of the blood, 12 years before it appeared in his book "An Anatomical treatise on the movement of the Heart and Blood in Animals." A small book of 72 pages it was at once a convincing demonstration of Harvey's doctrine, and a pattern for all future physiological inquirers.

As Vesalius used the evidence of eye and hand in making clear the structure of the body, Harvey made deliberate and repeated experiment upon living animals the basis of his conclusion in respect of the functions; reaching that conclusion by one long sustained argument built upon fact after fact, either discovered by himself, or like the valves of the veins, discovered by another, but till then wrongly interpreted.

The inconsistencies of the prevailing explanations which to lesser minds had been as "poppy and mandragora" inducing mental slumber, were to Harvey the efficient stimulus to inquiry.

Among these were the view that the diastole was the active phase of

the heart, when during each pulsation a wounded artery spurted blood out instead of drawing in air.

Again of the pores in the ventricle for the passage of blood, he says, "for in the first place—By Hercules! there are no such porosities, and if there were how could one ventricle draw from the other since both contract at once? And if the pulmonary vein carry spirits one way and fuliginous vapours another why are they not mixed?"

These and other difficulties set Harvey to work examining the movements of the heart in animals. These movements he at first found so confusing by reason of their rapidity that he almost despaired of understanding their sequence, but finally by patience and perseverance he convinced himself that the active phase of the heart was its systole, not its diastole, that at the systole the heart contracted in all its diameters and became visibly paler, and that with this systole there came the swelling of the vessels, long thought to be a part of their heart's diastole, consequently, he concludes that the arteries have no pulsating power of their own, but distend before the blood as the finger of a glove distends when blown full of air.

Before Harvey the auricles had been regarded as chambers of the veins, but he observed that in a dying heart the auricle died hardest and while it continued to contract, a wound made in the ventricle showed a spurt of blood with each pulsation of the auricle.

The rapid succession of movements in auricle, ventricle and arteries he compares to the mechanism of a musket where at the touch of the trigger the flint comes down, strikes the steel, knocks fire into the powder which explodes and drives the bullet to its mark.

With this as a beginning he takes up the stages of the circulation in order, first demanding: How is the blood carried from the veins to the arteries or from the right to the left ventricle? Here his immense amount of experiment upon various animals gives him his proof.

In fish, he says, which have no lungs and but a single ventricle, and in frogs and serpents which have lungs, the blood may be readily seen to pass to the heart by veins and leave by arteries, and if where lungs exist the blood may be shown to pass *to* them from the right and *from* them to the left ventricle, surely it must be admitted that it passes through the lung tissue!

From this demonstration Harvey approaches what is his most revolutionary statement. He argues thus: At each beat a certain amount of blood passes from the veins to the arteries. Even at its very least calculation, estimating from the altered capacity of the dilated and contracted ventricle, it must in a short time amount to more blood than

is contained in the whole body. As a result, to quote his own words, "I began to think whether there might not be a motion as it were in a circle. Now this I afterwards found to be true, and I finally saw that the blood, forced by the action of the left ventricle into the arteries, was distributed to the body at large and into its several parts in the same manner as it is sent through the lungs, impelled by the right ventricle into the pulmonary artery, and that it then passed through the veins and along the vena cava and so around to the left ventricle in the manner already indicated, which motion we may be allowed to call circular."

Having thus made his proposition, he first proceeds to prove the passage of the blood in the peripheral organs from the arteries to the veins.

This he does by two forms of ligature, the tight one constructing the artery, rendering the arm bloodless and cold, the moderate one constricting the veins only, rendering the extremity flushed and turgid.

Next he proves the passage back by the veins to the heart and here he makes use of the discovery of his master, Fabricius, the valves in the veins.

By ligating an arm these appear as little nodes.

Pressure above a node may empty the vein of blood in the upward direction, but cannot push it downward.

Thus by the undeniable testimony of visible, tangible and palpable facts, he proves his case.

It is notable, however, that he rejects an hypothesis long held which would have materially assisted his demonstration, that of direct anastomosis between arteries and veins, choosing rather to assume the passage of the blood by filtration through the parenchyma of the tissues.

It is characteristic of the man that he did not accept what could not be proved by the means available to him at the time.

Before Harvey men had loaded the idea of the vascular system with spirits, vital and animal. To these he gave no heed. His was a demonstration of a mechanism on a purely physical basis, and as such it freed physiology from the idea of the "spirits" forever, although the name lingered for a century.

It need not be thought that Harvey's views immediately displaced the teaching of centuries. Many and bitter were the attacks upon his revolutionary doctrine, but they served it well by bringing enquiry to bear upon it, which only brought added proof to Harvey's own masterly demonstration.

Harvey died in 1657, at a good old age, having the satisfaction of

seeing in his own lifetime his doctrine received by all, but the most hidebound conservatives.

In 1622, halfway between Harvey's first announcement of the circulation and the publication of his book, Aselli, an Italian, discovered the Lacteals, and 25 years later Jean Pecquet, of Paris, made known the discovery of the Thoracic Duct and Receptaculum Chyli. This immeasurably enhanced the value of Harvey's discovery.

Four years after Harvey's death, Marcello Malpighi, whose name is embalmed in so many of the body structures, supplied with his microscope the missing link in Harvey's chain by showing the capillary circulation in a frog's mesentery.

Somewhat later Leeuwenhoek, with an improved lens, saw the red corpuscles and followed the circulation in the tadpole's tail.

This description is so realistic, and his pleasure in his work so real that I cannot refrain from quoting his words, "Yet what was most remarkable was to see the manifold small arteries that came forth from the great one, and spread into several branches; and turning come into one again, and were reunited, that at last they did pour out the blood again into the great vein, this last was a sight that would amaze any eye that was greedy of knowledge."

From this onward it is only possible to touch the physiology of the circulation in the high places, while coming down to the present day. While Harvey approached the circulation from the side of anatomy, Borelli, a pupil of Galileo, somewhat later brought to its aid the new physics.

He demonstrated the function of the arteries which by virtue of their elasticity maintained the pressure which the heart initiated. About 60 years later in 1726, Rev. Stephen Hales, a parish clergyman of the Church of England, who was interested in natural science, first estimated by using a horse the actual pressure of the blood in the vessels of an animal.

In the 18th century, also, Haller, of Berne, who may take rank with Vesalius and Harvey, commenced the modern enquiry into the cause of the heart beat and in this connexion he enunciated the doctrine of Irritability, to which he attributed the heart's rhythmic movement.

That the heart in its action was independent of all external causes, was worked out early in the present century, but that though independent, it was still influenced by various impulses was the classical contribution of the Weber brothers, who in 1845 demonstrated the inhibitory power of the vagus. That the heart itself contained nervous ganglia was shown later by Bidder and Remak and since then war has been waged

between those who would look upon the muscle and those who look upon the nerve-elements as the first cause of the heart beat. But like the contention as to whether the hen existed first, or the egg, much may be said on both sides, and certainly much has been said. Of the myogenic theory, Gaskell has been the chief exponent.

Of late much has been said of the chemical constituents of the heart's environment as a cause of its rhythm, and it is among such subjects as these we find ourselves at present.

It would not be fitting did I leave out some reference to the man who most of all has connected physiology with clinical medicine and pathology.

This man was Lænnec, the inventor of the stethoscope which brought the sounds of the heart and their changes in disease into relation on the one hand with the results of physiological experiment, and on the other with the findings at the autopsy table, thus indissolubly connecting a knowledge of the normal with the pathological by means of accurate clinical methods which should be the ambition of every honest student of the healing art.

It would have been impossible to mention a fraction of the names associated with the development of our knowledge of this subject, but I have attempted to point out a few of the landmarks and to show the direction in which they pointed the thought of their time.

From the study of the whole subject it seems to me that no more useful conclusion can be drawn than that facts carefully observed and accurately recorded, even though at the time they bear no evident relation to existing theories, may, when added to other facts similarly obtained, immeasurably advance medicine as a science and as an Art.

It was in the observations of Hippocrates, Galen, Vesalius and Harvey that vitality and permanency existed, while the speculations and traditions which attached to these were gradually, but surely, sloughed off to give place to the new and healthier tissue of succeeding observation.

ULCERATION OF THE CORNEA FORM THE DIPLO-BACILLUS OF MORAX-AXENFELD.

BY

HANFORD MCKEE, B.A., M.D.,

The case which I have brought before the Society this evening is of interest chiefly from the result obtained by most conservative treatment.

Read before the Montreal Medico-Chirurgical Society.

That cases of ulceration of the cornea, caused by the diplo-bacillus, do occur has been known for some years.

In 1898 Petit reported three cases of hypopion keratitis in which he found the diplo-bacillus called by his name.

The cases all resembled ordinary cases of serpiginous ulceration of the cornea of ordinary degree.

Peters reported two cases; Pflüger saw nine cases; Hoffman and Sweet saw two cases; Schmidt, in 193 cases of diplo-bacillary conjunctivitis, saw four times deep ulceration of the cornea.

Paul, of Breslau, reported 26 cases, while Erdman in 342 cases of diplo-bacillary conjunctivitis saw ulceration of the cornea in 30 of them.

In Montreal I have seen 70 cases of diplo-bacillary conjunctivitis, and on two occasions ulceration of the cornea.

This patient, G. H. B., 50 years old, a teamster, came to the out-patient department of the Montreal General Hospital, January 17th, 1906, and complained that for two weeks past his left eye had been "sore," and that during the last two days the eye had been swollen and very painful. There was no history here of trauma, no sign of tear sac trouble.

The condition of the left eye was as follows: marked blepharo-conjunctivitis, œdema of the bulbar conjunctiva, the surface of the cornea over its central third showed deep ulceration with a large hypopion, iris was dull, severe chemosis, pupil contracted. Vision = pl., T.=N.

The patient said he had had "sore eyes" all his life; the edges of his lids were always red, and his eyes were generally watery.

A smear was made from the surface of the ulcer and from the conjunctival sac, and tubes were immediately inoculated. From the surface of the ulcer diplo-bacilli were found, and were the only organisms seen. From the conjunctival sac the diplo-bacilli were found associated with the xerosis bacillus and the staphylococcus pyogenes albus.

The patient's eye was immediately irrigated with solution of sulphate of zinc, one grain to the ounce. Drops of scopalamine were instilled, and the patient was sent to the ward.

The treatment received there was as follows: Instillations of scopalamine; of zinc sulphate; frequent irrigations with warm boracic solution.

The patient made rapid progress.

The chemosis disappeared, the ulceration healed, and the patient has at present a very useful eye. Vision is $\frac{2}{3}$ of normal.

This case I have brought before you because of the excellent result which was obtained by the most conservative treatment.

STONE IN THE URETER.

BY

R. P. CAMPBELL, B.A., M.D.

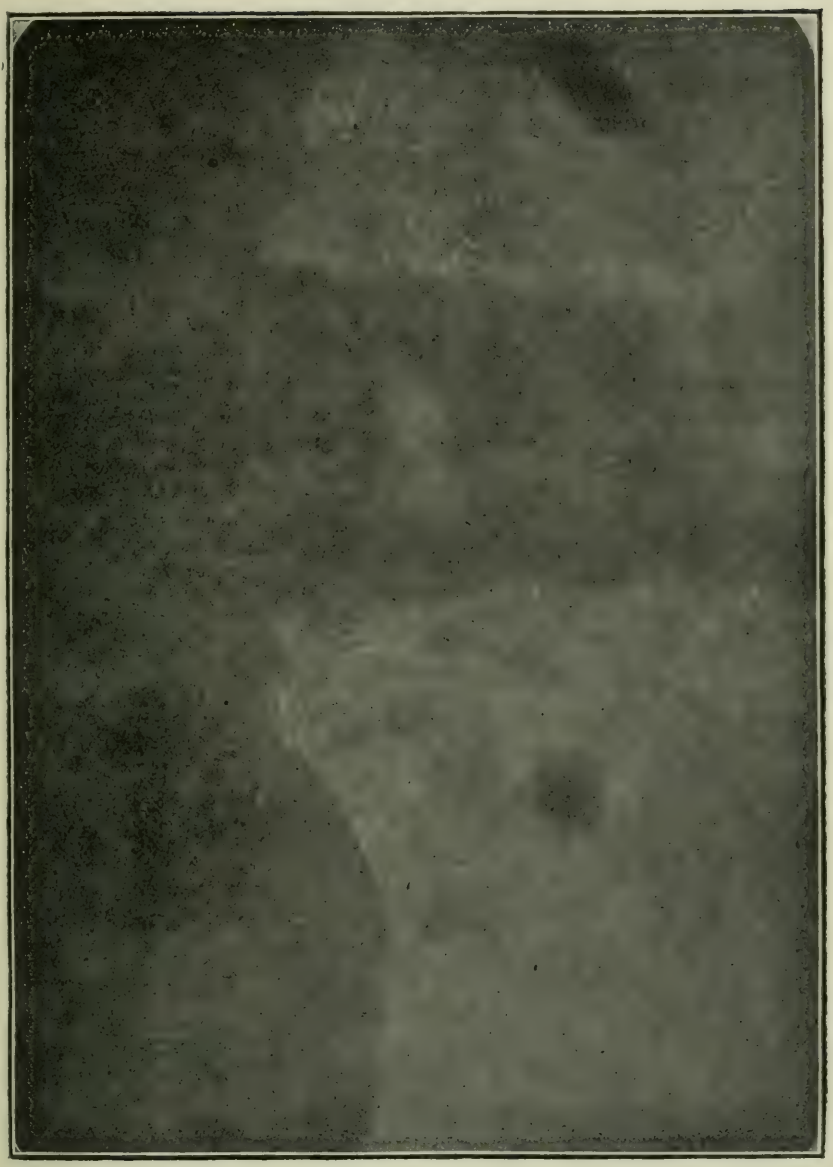
The diagnosis of calculus in the urinary tract is, in many instances, one attended by no small degree of difficulty. While the stone in the bladder is fairly easily recognizable by means of the stone searcher and cystoscope, stone at a higher level presents many more difficulties, not only as to its existence but, secondarily, as to its whereabouts. The differential diagnosis between gall-stone, appendicitis, intestinal obstruction in its early stages and true renal colic and more particularly Dietl's crises in floating kidney thus demands all the aid which modern methods provide.

Undoubtedly the most important aid in conjunction with the symptom of pain—almost invariably present is the urinary analysis; when therefore, this proves negative or ambiguous it is necessary to look elsewhere for aid.

Should one accept much that is written on the use of the Röntgen rays in the diagnosis of renal or ureteral calculi one might almost believe that these can be detected with unerring accuracy. That all stones—even all denser stones, such as the oxalates, which under favourable conditions invariably throw a well marked shadow, are recognizable is far from being in accordance with the facts. Conditions in the living body, such as respiratory movement, pressure of fat, overloaded intestines, etc., play too prominent and confusing a part. When, however, such conditions can be minimized or corrected, then do the Röntgen rays aid the renal surgeon in no small degree. To quote Shede, "even then so uncertain are they that only when they yield a positive finding are they of value, from a negative finding one can draw no conclusions."

That the use of these rays can be of material aid is well illustrated in the following instance, taken from Dr. Armstrong's wards at the Montreal General Hospital.

A woman, 33 years of age, the mother of five children, the youngest one and a half year, who had experienced the usual infections of childhood, and about thirteen years ago had had an attack of inflammation of the bowels, so called, presented herself at the hospital complaining of



pain in the lumbar region. This pain radiated down the backs of her legs, into the abdomen and up the spine, perhaps affecting the right side the more. It had commenced suddenly, on rising one morning after a previous day's hard work, in the right side—about the level of the umbilicus, lasted three hours, necessitated morphine, occasioned vomiting, and was thought by the attending physician to be caused by a stone in the bladder. There was no subsequent jaundice—no blood in urine nor retention. After three or four days the patient was well again and remained so for one year, when the pain returned, less severe, but more constant. It has been present off and on ever since; a severe dragging pain subject to exacerbations, never so severe as in first attack, and sometimes absent for two or three weeks. This continued till January, 1905, when the patient had another severe paroxysm, very like the first, accompanied by vomiting, demanding morphine and relieved by rest in bed. Since then attacks have been more frequent, very similar in character, never followed by jaundice nor by any change in urine. The patient has lost about 25 pounds in weight during last two years.

On examination the patient proved to be a well developed, poorly nourished women. The thorax negative. The abdomen soft and pliable—permitting thorough palpation; the right kidney being palpable to its lower quarter. Below this is the right nipple line, and slightly above the iliac crests a small not very tender area could be distinguished. A catheterized specimen of urine showed an acid reaction—a specific gravity of 1025, a trace of albumen, a small quantity of pus and numerous crystals of calcium oxalate.

A provisional diagnosis of stone in the ureter was made, and a Röntgengraph prepared with accompanying result—a definite right shadow ½ inch from border of the spine and one inch above the chest of the ileum 1½ x 1 cm. in diameter. A second exposure confirmed the first, and on March 13th, by means of a lumbar incision extending forward, the ureter was exposed and an impacted stone of the above dimensions or slightly larger, consisting of "calcium oxalate," was removed from a spot about 1½ inches below the pelvis of the kidney. The wounds in ureter and skin were closed and patient made an uninterrupted recovery.

Calculi in such positions are undoubtedly more easily distinguished than when in the kidney itself, not only because here they are influenced by respiratory movements, but also because they are free from the shadow of the ribs above the pelvis below, a fact of no small importance from the radiographer's standpoint.

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THE INVESTIGATION OF SLEEPING-SICKNESS.

The Medico-Chirurgical Society had a great treat on Friday, 16th March, in listening to Dr. John L. Todd's lecture upon the investigations of the expedition of which he was a member, to study the sleeping-sickness of Africa. Dr. Todd is a recent graduate of McGill University, who, after a term of service in the Royal Victoria Hospital, joined the Liverpool School of Tropical Medicine, for which institution he made several journeys to the West African coast. While at work, with Dr. Dutton, in Gambia, they were recalled for the purpose of organizing an expedition sent under the joint auspices of the King of the Belgians and the Liverpool School into the Congo Free State, to study sleeping-sickness as it existed there, and, if possible, find out a method of preventing its further spread. Dr. Todd, who has, since his return, appeared before learned societies of Liverpool, London,

Oxford and Brussels, dealt with the general features of two years' work, which began at the mouth of the Congo, covered 2,000 miles of travel in the Free State, and resulted in the establishment of certain facts of great interest and usefulness, though it was at the price of the life of Dr. Dutton, one of the foremost young men in the ranks of workers upon Tropical Medicine.

Dr. Todd was greeted by an overflowing meeting of the Society, and showed a series of very interesting lantern pictures, mostly photographs from his own camera. The expedition, which consisted of Drs. Dutton and Todd, with Dr. Heiberg, a German physician who had spent several years in the Congo Free State, whose connection with it was official rather than scientific, went up the Congo from its mouth to Kasongo, which lies about 250 miles from Lake Tanganyika, which forms the eastern boundary of the Free State; at this point they turned and retraced their steps.

At the present time, when we hear so much of atrocities in the Congo Free State, it is interesting to hear the testimony of one who knows. In conversation, Dr. Todd states that he has not had personal knowledge of actual cruelty practiced by white men upon black, and further, that the relationship of the whites to the blacks is precisely a reproduction of the early history of commercial colonization in this country; the trading companies of the Congo Free State are the Hudson Bay Company of our own country; further, he bears testimony to the efficiency with which alcoholic liquor is kept out of the hands of the natives.

The expedition examined in various ways many thousands of natives, and established the fact that nearly all general glandular enlargements, without evident cause, such as syphilis or tuberculosis, are cases of trypanosomiasis, even if the person so affected have not any other sign of the disease. The palpation of enlarged glands in the posterior triangle of the neck, is considered by the members of the expedition, as sufficient evidence of the existence of the disease, and this is an easy test, capable of being used by an intelligent layman. The blood often fails to show trypanosomes, when they are present, but the juice of enlarged glands, removed by hypodermic needle, is practically unfailing. Dr. Todd insists that the sleepiness is often but a terminal sign, is a kind of accident, and not necessarily an unfailing symptom of the disease. Change of character, lassitude, great physical weakness, and emaciation are constant features.

At the present time, the disease is spreading surely though slowly in Africa, chiefly by trade routes. In ten years, various estimates

place the loss of life in the Congo Free State up to half a million people. The disease is of such slow development, that progress in its study is necessarily slow, and, meantime, the spread goes on unchecked. The expedition has recommended that quarantine be made at certain points on the trade routes, where a white man, with proper authority, would allow no native to pass to the disease-free parts of the country, if he showed any glandular enlargement of the neck, as above described.

No remedy for the disease has yet been found. Combatting the trypanosomiasis of animals, Dr. H. Wolferstan Thomas, another McGill graduate, who has recently worked at Liverpool, has attained the best results so far, by using certain arsenical compounds. By the way, the Society may look forward to hearing from Dr. Thomas at a future day, a recital of the scientific dangers of Brazil, which will not be far, if at all behind those experienced by Dr. Todd in the Congo.

Dr. Todd made modest claims for the success of the expedition, but his figures, briefly stated, were sufficient to show that an enormous amount of work had been performed. The deductions made and the measures proposed seemed to the audience to be most reasonable and just ones. Of himself, and his own part in the expedition, Dr. Todd said little or nothing. Reading between the lines, one could not but feel that there was material in his personal experiences for many such interesting hours; and we voice the sentiments of the entire Society when we express our pride in our part-ownership of Dr. Todd and his achievements.

THE PUBLIC HEALTH.

The curious meteorological conditions which have prevailed in Canada during the past winter have been accompanied by unusual manifestations of disease. Typhoid fever and small-pox have been unusually prevalent, and in one or two instances went entirely beyond control.

The Provincial Board of Health has been called upon to cooperate in dealing with outbreaks of small-pox in widely separated parts of the Province. In February forty-six cases were reported from St. Cyrille. Within four weeks the number was reduced to five, and at the present writing the disease has been eradicated from that district. Cases have been reported from the counties of Arthabaska, Laval, Drummond, Compton and Wolfe. The news from the Seven Islands is rather alarming, and a considerable expedition has been dispatched to cope with an outbreak in that distant region.

Fortunately, Quebec is becoming a well-vaccinated province, and nothing is head of that stupid opposition to the measure which is so common in other provinces. In Toronto this opposition is so strong that the School Board felt obliged to rescind the rule that vaccination be compulsory.

But the open winter has especially favoured the spread of typhoid, not in Montreal, but in the country districts and outlying municipalities. At St. Martine, in the county of Chateauguay, an outbreak of forty cases has occurred, and is not yet under control.

The enormous emigration to Canada, the expansion of the newer towns without proportionate extension of sanitary appliances, has led, as might have been expected, to a diffusion of typhoid. The state of affairs which prevails at Fort William is a case in point. The inhabitants of that enterprising town committed the indiscretion of drawing their water from the river into which they discharge their sewage, and there was nothing extraordinary in the results. As long ago as January there were 106 cases with 53 deaths.

The authorities of Fort William followed the mediæval practice of denying that the disease was epidemic until four hundred cases had developed, and even then the situation was not frankly dealt with. An air of mystery was given to the outbreak even by the professional advisers who were called in. Instead of recording the number of cases actually existing, the number of deaths occurring daily, and the number of new cases each day, those in charge of the outbreak have fallen in with the local authorities in refusing to disclose the exact state of affairs. This is a public matter, and the public has a right to know the extent to which any locality is making itself a menace to the community at large.

THE NEW PROVINCES.

The physicians of Alberta are alive to the needs of the new Province. A meeting was held in Edmonton on February 27th, the result of which will in all probability be the formation of a college of physicians and surgeons for the Province of Alberta to take the place, so far as that province is concerned, of the present college of physicians and surgeons of the North-West Territories.

The old society, which is recognized by the ordinances of the North-West Territories, was for the three territories now constituted as the provinces of Alberta and Saskatchewan. The readjustment in legislative boundaries makes desirable a readjustment of territory under the

jurisdiction of the college of physicians and surgeons, and it was with this idea in view that the convention in Edmonton was called.

There were present at the convention: Dr. Brett, president of the council of the territorial college of physicians and surgeons; Dr. Seymour, of Regina, vice-president; Dr. Lafferty, of Calgary, registrar; and Dr. Stewart, of Rosthern, a member of the executive; besides Dr. Deveber, of Lethbridge, and some fifty members of the medical profession from points in northern Alberta. Of these, about thirty were from Edmonton: every Edmonton practitioner with the exception of one or two being present.

The result of the deliberations was that it was left in the hands of the executive council of the territorial college to call a meeting at some future date, the meeting to be authorized by the territorial college of physicians and surgeons as at present constituted, for the purpose of taking action to secure the necessary legislation to secure the formation of an Alberta medical society.

THE PREVENTION OF TUBERCULOSIS.

The sixth annual meeting of the Canadian Association for the Prevention of Consumption, and other forms of tuberculosis was held in Ottawa, on the 28th March. The object of this association is to interest the public, and arouse them to the peril of the disease, to the end that preventative measures be adopted.

Something has been done. The Senate has adopted a resolution in the following terms: "That in the opinion of the Senate the time has arrived when the state should take some active steps to lessen the widespread suffering and the great mortality among the people of Canada caused by the various forms of tuberculosis, and that a conference between the Dominion and Provincial Governments should be had at the earliest possible moment in order that the best mode of action in the premises should be adopted."

The House of Commons has also recorded that "the time has arrived when Parliament should take some active steps to lessen the widespread suffering and the great mortality among the people of Canada caused by various forms of tuberculosis."

As a consequence of these resolutions, a deputation of both houses waited upon the Premier, and after presentation of the case, it was agreed that the minister of justice should be requested to give an opinion stating how the government of Canada could best give effect to the unanimous wishes of the Dominion parliament.

Following up these resolutions a meeting of the executive of the Association was held, and a campaign of education was undertaken under the following resolution: "That inasmuch as the educational authorities in England, Europe and the United States are now moving as to the appointment of medical men to inspect educational institutions with reference as to the health of the children, in order, as far as possible, to obviate the spread of tuberculosis, this council is of the opinion that the educational departments of Canada should be invited to consider the matter."

Copies of this resolution were sent to the minsters of education in all the Provinces, and in many cases they were acted on. For example the Government of Nova Scotia issued a series of suggestions and instructions for the guidance of teachers, inspectors and health officers which must prove serviceable in promoting the health of the province.

PATENT MEDICINES.

The Vancouver Medical Association at its regular meeting of March 12th, 1906 resumed the discussion of Patent Medicines. There was unanimity in the conviction that laws should be enacted to eradicate the existing evils. It was pointed out that in their promiscuous sale there exists a real danger to the public and that gross frauds are being perpetrated and that in their advertisements morally dangerous literature is being circulated.

As is well known, the drugs that are commonly used in patent medicines are opium or its derivations, as found in consumption or colic cures and soothing syrups; cocaine in catarrh mixtures, acetanelid in headache powders, chloral hydrate in drink cures; belladonna, ergot and cotton root in preparations recommended as abortifacients; and alcohol which is used in medicines represented to cure all diseases. Most of these are poisonous and so immediately dangerous to life. Opium in any form is particularly dangerous to children. On the other hand, all are even more objectionable if taken for any length of time. At first they relieve symptoms or supposed symptoms or create pleasant feelings. This impels the user, who is unconscious of what he is taking, to continue their use until a habit is acquired, which eventually leads to the ruin of his mental, moral and physical nature. Yet these are the drugs which are sold in a secret way and without license.

The majority of these preparations as well as being dangerous, are fraudulent because the vendors of them, in their advertisements claim to cure many diseases which scientists know are incurable. But there

is another class of preparation which is absolutely fraudulent. They contain no drug of any medicinal value, but depend for their sale entirely upon the extravagant and false claims of the manufacturer. Thus the despairing mind of the imaginative neurotic is preyed upon.

Then, again in the advertisements which appear in our periodicals both religious and secular, very corrupting literature is constantly being circulated. This cannot but have a debasing effect upon some and is disgusting to all others.

The secrecy which the existing laws allow in connection with so-called patent medicines, is mainly responsible for all these evils. If persons knew, as they should know, what is offered to them, they would be able to discriminate between the beneficial and harmful and between the honest and dishonest. Many of the worst of the patent medicines are distributed through His Majesty's mails, which should not be allowed.

At the close of the discussion, the following resolution was unanimously adopted.

"Whereas in the opinion of the Vancouver Medical Association there exists a real menace to the community in connection with the sale of patent medicines:

"Whereas the evils are so complex that a proper solution can be arrived at only by competent disinterested persons.

"Be it resolved that the Dominion House of Commons, now in session, be petitioned to appoint a commission to investigate this whole matter with a view to enacting laws which will eradicate these evils."

This memorial is signed on behalf of the Vancouver Medical Association, by F. C. McTavish, M.B., William Stephen, B.A., M.B., and William D. Keith, M.B.

The thirty-eighth annual report on the lunatic and idiot asylums of Ontario shows that there were 6,213 patients certified insane on September 30th, 1905, an increase of 632 for the year, during which 1,130 patients were admitted. On September 30th, 1905, the number of patients was 4,613. The total cost of maintenance for the year was $760,204, a weekly cost per patient of $2.30. The revenue from paying patients amounted to $114,916. There were 315 patients discharged cured during the year, one of these after twenty years. The number of deaths for the year were 343, a percentage of 5.97. Tuberculosis was the case of 43 deaths.

The *Journal of Outdoor Life*, which is published at the Adirondack Cottage Sanitarium, New York, has just entered upon its third year. It has been the official organ of the National Association for the Study and Prevention of Tuberculosis. The Journal deals with the outdoor treatment of tuberculosis. It aims to point out the more common pitfalls that beset the unwary health-seeker, and to awaken in its readers an interest in outdoor life. It advocates competent medical supervision, fresh air, nourishing food and carefully regulated exercise.

Queens College, Kingston, has fallen into line in abolishing the distinction between summer and winter sessions for medical students. The summer session which opens on April 16th will be the last. Next year, instead of having two medical sessions, a long and short one, there will be one eight months' session. The college will open and close at the same time as the classes in arts and science and the medical convocation will be held in common with the others at the end of April.

Dr. Hans Schmaus died at Munich, on December 4th, 1905. His name was well known in the world of Pathological Anatomy, and the work which bears his name has already appeared in four languages. He was a collaborator of the *Deutsche Medizinische Wochenschrift*, and a valued contributor of the *Lubarsch-Ostertag "Ergebnisse"*; he was in his 43rd year.

Ontario nurses are seeking incorporation from the Legislature. They desire to be known as the "Graduate Nurses' Association of Ontario." They wish to prescribe courses of instruction and hold examinations and grant diplomas. The government of the body is to be vested in an executive council of fifteen, four of whom are to be medical men.

Reviews and Notices of Books.

INTERNATIONAL CLINICS: A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles, Edited by A. O. J. Kelly, A.M., M.D. Volume IV Fifteenth Series, 1906. J. B. Lippincott Company, Philadelphia and London.

An indication of the excellence of this volume is afforded by the contents which we reproduce: *Treatment*: The treatment of Psoriasis, by William S. Gottheil, M.D. The therapeutic value and the mode

of action of physiological saline solution, by Dr. Hallion and M. Carrion. The treatment of some common gastric disorders, by Norman B. Gwyn, M.B. On the internal use of carbolic acid, by Moritz Benedikt, M. D. Nervous disorders in which psychotherapy may prove of value, by Gilbert Ballet, M.D.

Medicine: Empyema, with report of thirty cases, by J. N. Hall, M.D. The value of "post-tussive suction," as a sign of excavation in the lung, by D. Barty King, M.A., M.D., M.R.C.P. A method of abdominal palpation, by Alfred E. Thayer, M.D. The later stages of cirrhosis of the liver, by Sir Dyce Duckworth, M.D., LL.D. The thyroid gland, its anomalies of secretion and their manifestations and treatment, by Thomas R. Brown, M.D. The symptomatology and diagnosis of Malta fever, with the report of additional cases, by Charles F. Craig, M.D.

Surgery: The results of operations, such as gastro-enterostomy, pyloroplasty, etc., in the treatment of diseases of the stomach, by John B. Deaver, M.D. Phlebitis, thrombosis and embolism following abdominal and pelvic operations, by William A. Edwards, M.D. The study of the clinical course of joint tuberculosis by means of the X-Rays, by Albert T. Freiberg, M. D. Post operative surgical neurasthenia, with special references to cases, by Edred M. Corner, M.A., B.C. (cantab.) B.S.C., F.R.C.S. Eng. The etiology and early diagnosis of acute peritonitis, with the report of illustrative cases by Benjamin T. Tilton, M.D. Cysts of the lesser peritoneal cavity, by J. F. Binnie, M.D. The diagnosis of surgical diseases of the kidney, by J. Garland Sherril, A.M., M.D.

Obstetrics and Gynaecology: A study of ectopic pregnancy, with a report of twenty-seven cases, by Thomas A. Ashby, M.D. Sixty cases of extra-uterine pregnancy, by Franklin S. Newell, M.D. Pelvic haematocele and haematoma, by Cuthbert Lockyer, M.D. (Lond.) B.S., F.R.C.S., Eng. The medical treatment of the menopause, by Reynold W Wilcox, M.D., LL.D.

Pathology: An experimental study of the effects of Roentgen Rays upon the blood forming organs, with special reference to the treatment of leukaemia, by Aldred Scott Warthin, Ph.D., M.D. A contribution to the study of eosinophilia, by Charles E. Simon, M.D.

Ophthalmology: Syphilitic neuritis of the optic nerve with impending blindness successfully treated with calomel injections, by Louis Jullien, M.D.

GALL-STONES AND THEIR SURGICAL TREATMENT. By B. G. A. MOYNIHAN, M.S. (Lond.), F.R.C.S., Leeds. Second edition revised and enlarged. Philadelphia and London: W. B. Saunders & Company. 1905. Canadian agents: J. A. Carveth & Co., Ltd., 434 Yonge Street, Toronto.

The first edition of this work was completely exhausted in eight months. In the present edition the text has been carefully supervised; many additional case-records have been incorporated in the various chapters; several new illustrations have been added and a new chapter on abnormalties of the gall-bladder and bile-ducts.

Many of the reports of absence of the gall-bladder have been more or less inaccurate. The gall-bladder may be extremely small and shrunken, may be within the liver wholly or in part, and in certain instances has been found on the under surface of the left lobe. The author, however, finds examples in which it was not present at all. This chapter is of great interest, the matter being drawn from literature and from the great museums of the London hospitals. Mr. Moynihan is a master of technique and the chapter on the preparation of the patient, the operator, his assistant and the sutures and instruments is full and complete in detail. His use of rubber gloves, and long sterilized sleeves is abundantly proved to be safe and to give good results. He prefers iodin catgut prepared by the simple method of Claudius, and Pagenstecker's celluloid thread. Linen thread is strong, smooth, cheap, and has much less capillary attraction than silk. This latter point is easily demonstrated and is one of its decided advantages. It can be boiled three or four times. After that it had better be thrown away.

The whole subject of cholelithiasis and the various operations on the bile passages are clearly outlined, credit being given to those who have contributed to the present high standard of this important work. The illustrations and coloured plates are clear and distinct.

MANUAL OF PATHOLOGY, by W. M. LATE COPLIN, M.D. Fourth Edition, 1905, Philadelphia. P. Blakiston's Son & Co.

Originally published in 1904-5 as "Lectures in Pathology" this work has passed through four editions and now appears practically as a new work. While the former editions were utterly inadequate as manuals on pathology, the one before us, is revised, re-arranged and largely rewritten. Of the work in its present garb we have little to say but praise. Some would perhaps, like ourselves, be disposed to relegate such

subjects as post-morten examination, bacteriological technique, and the clinical examination of the blood, urine and sputum to works specially devoted to laboratory methods or to clinical diagnosis for it is difficult to deal with those branches at all adequately without encroaching on valuable space or producing an unwieldly volume. The arrangement of the chapters might in some places be a little more logical and orderly, but on the whole not much fault can be found on this score.

The various subjects are treated adequately, the illustrations are numerous and generally elucidate what they are intended to exemplify, and a useful bibliography has been appended. The result is a book that is eminently readable, accurate, and comprehensive, and withal kept within a suitable compass. The illustrations are largely original and are simple in character reminding us of those in Ziegler's classic work. On the whole, in our opinion, this is one of the most satisfactory books on this important subject which has yet appeared in English.

A. G. N.

A Manual of Diseases of Nose and Throat. By Cornelius Godfrey Coakley, A.M., M.D. Third edition, revised and enlarged. Illustrated with 118 engravings and five coloured plates. New York and Philadelphia: Lea Brothers & Co.

That a third edition of this work should be issued in comparatively so short a period of time, must indeed be gratifying to the author. The present edition is a decided improvement over the previous one. The chapter on "Diseases of the Accessory Sinuses" has entirely been re-written, and new diagrams added. The work generally is well written, and the subject matter well up to date. But one observes with surprise in a work as extensive as this, and elaborating so many details of the different subjects as it does, that there is omitted from consideration "Septic Oedema of the Larynx," and "Foreign Bodies in the Bronchi," two subjects which, at least, a general practitioner or student for whom this book apparently is written, should have some knowledge of.

In the section on "Deviation of the Septum," one notes the absence of the operation of "Re-Section," for the relief of this condition, which has been placed upon so satisfactory a basis, that the results in the majority of cases are far better than the method advocated in this text book, namely, "The Asch Operation." The diagrams are good, but the coloured plates are poor.

H. S. B.

A Text-Book of Pharmacology and Therapeutics; or, The Action of Drugs in Health and Disease. By Arthur R. Cushny, M.A., M.D., Aberd.; Professor of Pharmacology in the University College, London, England; formerly Professor of Materia Medica and Therapeutics in the University of Michigan. Fourth edition, thoroughly revised. Illustrated. Lea Brothers & Co., Philadelphia and New York, 1906.

Professor Cushny's text-book is too well known to require a repetition of the commendation that has been given previous editions. The present (fourth) edition has been published, following the revision of the *United States Pharmacopœia*, and it takes note of the progresses of the last two years. This has brought many textual changes in the book, and one or two items have been largely reconsidered and amplified, especially chlorform and wood alcohol. The chapter on the former drug is a business-like, condensed, straightforward exposition in which the author takes up the case between ether and chloroform in the light of late investigations, and gives a most useful and most direct *resumé* of the practical points concerned. In the chapter upon wood-alcohol we notice reference to the well-known work of Buller and Wood.

The bibliography, which was a very useful feature of previous editions, is curtailed to admit the later works, by means of which, however, the practical utility of the whole is increased rather than diminished, as the later works frequently contain the references to older ones which have been superseded.

Urinary Analysis and Diagnosis by Microscopical and Chemical Examination. By Louis Heitzman, M.D., New York. Second revised and enlarged edition. New York: William Wood & Company, 1906.

The portion of this book devoted to a description of the chemical examination of urine is fairly accurate. As much cannot be said for Part Second, which deals with Microscopical Examination. We only wish that the author's claims as to the amount of information to be gained by a microscopical examination of the urine could be substantiated. Take, for example, the chapter on pus corpuscles, which, by the way, the author states "are derived from emigrated white corpuscles, connective tissue cells, and the epithelia," and that "occasionally pus corpuscles have cilia. These arise from the ciliated columnar epithelia of the uterus, and when present justify the diagnosis of an endome-

tritis." Furthermore, the author is able to tell the probable duration of any case of disease from the character of the granulations seen in the pus corpuscles. No less extraordinary information can be gleaned from the forms of epithelia found in the sediment. Further extracts are unnecessary. If the teaching of the book were not absurd, it would be dangerous.

THE SIGNS OF INTERNAL DISEASE; With a brief consideration of the Principal Symptoms thereof. By PEARCE KINTZING, B.Sc., M.D., Professor of Physical Diagnosis and Diseases of the Heart, Maryland Medical College; Physician to the Franklin Hospital, Baltimore, Md. Illustrated. Cleveland Press, Chicago, 1906.

Professor Kintzing has foreseen that someone will say that there is no end of the making of books, and he has protected himself by stating that he here puts his ideas into concrete form for teaching. The student thus obtains a handsome volume of lecture notes, somewhat amplified, it is true, but still lecture notes. The book can not lay claim to be a treatise of Physical Diagnosis, nor yet a text-book on certain parts of internal medicine, although the section headings might lead one to that conclusion. Since Professor Kintzing claims these to be merely lecture notes for students, he can be congratulated on their handsome form and appearance. There is a great deal of information contained in the book, which is accessible by means of a more than usually full index. The wood cuts too often are of well known instruments, the photographs in some cases are unnecessary, and in several instances so dimly reproduced as to be useless, but the drawings are good.

CHRISTIANITY AND SEX PROBLEMS. By HUGH NORTHCOTE, M.A. Philadelphia: F. A. Davis Company. Price, $2.00, net.

This book has a good deal to do with sex, and very little with Christianity—or, it may be added, with decency. The heading to Chapter VII. is a fairly adequate description of the whole book "further aspects of fornication." The author describes his production as "a series of fragmentary and imperfect studies." In this we agree. Apparently Mr. Northcote is a clergyman, probably a master in a school, in which case he should not occupy his mind with these nasty things. The letter which is set forth as proper to be sent "To a boy beginning school" would arouse only disgust and shame. It might bring the writer under the notice of the Postmaster-General. Impurity amongst boys exists for the most part only in the minds of their elders.

THE TREATMENT OF GONORRHŒA IN THE MALE. By CHARLES LEEDHAM-GREEN, M.B., F.R.C.S. London; Baillière, Tindall & Cox; Toronto: J. A. Carveth Co., 1906. Price, $1.50.

This is a monograph upon the pathology and treatment of gonorrhœa. It takes account of the knowledge which is contained in scattered papers, chiefly of Continental origin, and makes it available for English readers. The introduction gives a trivial historical account of "the perilous infirmity of burning." The anatomical description of the parts involved is clear and correct. The author adds nothing to previous knowledge, because there is nothing to be added. Oil of sandalwood, mild injections or none—that is the treatment of gonorrhœa. It is an affair of management, and the author makes short work of specifics and abortive treatment.

THE PHYSICAL EXAMINATION OF INFANTS AND YOUNG CHILDREN. By THERON WENDELL KILMER, M.D. Illustrated with 59 halftone engravings, 12 mo., 86 pages. Extra cloth. Price, 75 cents, net. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia, Pa.

This little book contains many of the directions which one is in the habit of giving to nurses. One sentence will serve to illustrate the style in which the author writes: "Pardon this seeming sidetrack from our subject, but it is the keynote to success." A writer who identifies a sidetrack with a keynote should refrain from writing. The illustrations are numerous and for the most part unnecessary. Everyone knows what a tape-measure, a pair of scales, or a stethoscope looks like. The pictures of the nurses are pleasing.

GYNÆCOLOGICAL DIAGNOSIS. By ARTHUR E. GILES, M.D., B.Sc., Lond., F.R.C.S., Ed. M.R.C.P., Lond. Ballière, Tindall & Cox, London, 1906. J. A. Carveth Co., Toronto.

This book of 200 pages is designed as a manual for students and practitioners, and, as such, it well fulfils its purpose. The author works from symptoms to diseases, and the diagnosis is carried only so far as the general practitioner may be expected to go. Microscopic methods have been omitted, as being more suitable for the specialist and pathologist. The drawings are original with the author. For the persons to whom the book is addressed it will be found more useful than many of the more pretentious volumes.

DIE ORTHODIAGRAPHIE, Ein Lehrbuch für Aertze. Von DR. KARL FRANCKE, Specialarzt für innere Leiden in München. J. F. Lehmann's Variag, München, 1906.

This 90-page book deals with the interpretation of X-ray photographs, from the standpoint of the advanced student of that art. The author's preface states frankly that it is not for beginners, and a considerable degree of knowledge of the apparatus is presupposed. Mathematical measurement is everywhere considered in great detail. The book is illustrated by many diagrams.

LABORATORY GUIDE IN EXPERIMENTAL PHARMACOLOGY. By CHARLES W. EDMUNDS. A.B., M.D., University of Michigan, and ARTHUR R. CUSHING, A.M., M.D., University College, London. George Wahr, Ann Arbor. Price, $1.50.

This laboratory guide was developed in the University of Michigan. The course is well-ordered, and the directions are sufficiently full. A student who follows this guide will acquire a training of the greatest value.

NOTES ON GENERAL PRACTICE. By S. M. HEBBLETHWAITE, M.D., Lond. The *Scientific Press*, 1906. Price, 3s. 6d. net.

This is a very human book, written, apparently, by a man in general practice for a quarter of a century in the English country, and an assiduous reader of the *British Medical Journal*. There is in it the record of much experience and also much wrong inference, as in "The rearing of infants." One would like a quiet hour with Dr. Hebblethwaite. He is a kindly man.

Medical News.

THE McGILL MEDICAL JOURNAL CLUB.

The first annual meeting of this club was held on Thursday, the 29th March, in the rooms of the Medico-Chirurgical Society, the president, Dr. E. W. Archibald, in the chair. The secretary, Dr. Nicholls, read his report, showing that some twenty-one journals were now on file and could be consulted by the members. The membership consisted of fifty-five in good standing. Arrangements were in progress to still farther add to the usefulness of the organization. Dr. Morrow, the

treasurer read his report, which showed the receipts to have been $112.77 and the expenditure $93.43.

The following officers were elected for the ensuing year: Hon. president, Dr. T. G. Roddick; president, Dr. Archibald; vice-president, Dr. A. A. Robertson; secretary, Dr. Nicholls; treasurer, Dr. W. S. Morrow. Dr. G. D. Robins was elected to represent the department of medicine on the council in place of Dr. Gillies, who is leaving the city. Drs. Roddick and Macphail were unanimously elected honorary members of the club.

This club was started in the fall of 1904, on the initiative of Dr. E. W. Archibald, for the purpose of amplifying the list of medical periodicals on file in the McGill University Medical Library. It had been found, especially by those engaged in research work, that the journals ordinarily available were far from sufficient, and it was thought that a small annual contribution from persons interested would result in the addition of a considerable number to this department of the library. The result of the experiment has been very gratifying. A large number were in attendance at the first meeting and with practically no canvass some sixty-two names were placed on the role of membership. Dr. T. G. Roddick was elected hon. president; Dr. E. W. Archibald, president; Dr. B. W. Gillies, vice-president; Dr. A. G. Nicholls, secretary, and Dr. W. S. Morrow, treasurer. These officers, together with one representative from the various branches of medicine, surgery and pathology, were empowered to act as an executive council to carry the scheme into effect.

As at present constituted, the club is open to all members of the medical profession in good standing, who will pay the annual fee of $2.00. It is not restricted to members of McGill University. The income is devoted to the purchase of journals which are not already taken by the Medical Library. These journals are the property of the club, and may be consulted at any time by the members of the club. It may be mentioned that the periodicals are not purely special, but many of them will appeal to the general practitioner, so that anyone joining the club will be likely to find something of interest to him personally. It is open also for members of the club to suggest the names of journals which they would like to see in the library. These will be passed upon by the committee, and, if thought desirable, will be subscribed for so far as the funds warrant. At the end of the year the various journals are presented to the Medical Library of McGill University.

The committee named has met at irregular times during the past

year and is in a position to report a good deal of work accomplished. Progress was at first slow, owing to the desire of the committee to make satisfactory financial arrangements with the various publishers. Through the courtesy of the MONTREAL MEDICAL JOURNAL, the Journal Club was authorized to offer to the publishers of foreign magazines exchange with the MONTREAL MEDICAL JOURNAL, free of cost to the club. In the event of the subscription price of the desired periodical being in excess of that of the MONTREAL MEDICAL JOURNAL, the club was to pay the difference. Quite a few of the publishers communicated with accepted these terms, and one or two were good enough to send their journal entirely free. All this, of course, took time, but the committee is adding to the list of journals on file of the club from time to time. At present the following periodicals may be consulted:

Byron Bramwell's Clinical Studies, Glasgow Medical Journal, Médico-legal Journal, Journal of Obstetrics and Gynæcology of the British Empire, Archives d'opthalmologie, Presse médicale, Presse médicale belge, Révue de Gynécologie, Révue hebdomadaire de Laryngologie, d'Otologie, et de Rhinologie, Révue médicale de la Suisse Romande, Archiv. für Kinderheilkunde, Bio-chemisches Centralblatt, Beiträge zur klinischen Chirurgie, Centralblatt für die Grenzgebiete der medizin und Chirurgie Ergebnisse der Physiologie, Prager medizinische Wochenschrift, Wiener klinische Wochenschrift, Zeitschrift für Psychologie, Zietschrift für Heilkunde, Zentralblatt für normale Anatomie und Mikrotechnik, Zeitschrift für ärtzliche Fortbildung..

After the current number is on file, back numbers may be taken away on application to Miss Charlton, the librarian. The club is greatly indebted to the Medical Faculty for their generosity in providing a suitable cabinet for the display of the journals received. It is hoped that many more of the medical profession will see their way to assist the McGill Medical Journal Club, inasmuch as it affords an opportunity for obtaining a great amount of valuable reading matter at a minimal cost.

ROYAL VICTORIA HOSPITAL.

Report for month of February: Patients admitted, 258; patients discharged, 231; patients died, 14. Medical, 88; surgical, 94; ophthalmological, 23; gynæcological, 29; laryngological, 24. Out-Door Department: Medical, 726; surgical, 468; eye and ear, 342; diseases of women, 122; nose and throat, 467; total, 2,125. Ambulance calls, 69.

MONTREAL GENERAL HOSPITAL.

During the month of February 250 patients were admitted to the wards of the General Hospital, and 242 were discharged. The average daily sick in the hospital were 205, and the highest number on any one day was 211. There were 14 deaths, seven of which occurred within three days of admission. The outdoor consultations numbered 3,957. The ambulance responded to 140 calls. The average number of visitors at the hospital was 245.

A Medical Society has been formed in Alberta with the following officers:—Hon. President, Dr. Kennedy, Macleod; president, Dr. Brett, Banff; vice-presidents, Dr. Braithwaite, Edmonton; Dr. Lafferty, Calgary; secretary, Dr. Cumming, Calgary.

A sanitarium for patients suffering from tuberculosis at Kamloops is assured. The province has granted five thousand dollars, and a beginning will be made this year. It will be under the management of the British Columbia Anti-Tuberculosis Association.

The Sixty-Second Annual Meeting of the American Medico-Psychological Association will be held in Boston, on Tuesday, Wednesday, Thursday and Friday, June 12th to 15th, 1906. The headquarters of the Association, will be at the Hotel Vendome, where rates have been secured at from $4.00 to $4.80 per day, American plan. The Chairman of the Committee of Arrangements, is Dr. Geo. T. Tuttle, of Waverly.

The Second London Medical Exhibition will be held in the new hall of the Royal Horticultural Society, Vincent Square, Westminster, during the five days, Monday, Tuesday, Wednesday, Thursday, Friday, October 1st to 5th, 1906.

The object of the exhibition is to bring together appliances and preparations in which the profession is interested.

At the last meeting of the Council of the Medical Society of New Brunswick the following boards of examiners were elected:—

Registration—Dr. P. R. Inches, Dr. A. B. Atherton, Dr. G. A. B. Addy, Dr. T. D. Walker, Dr. J. W. Daniel, and Dr. Stewart Skinner.

Matriculation—Dr. H. V. Bridges and G. W. Hay.

The following officers were elected for the ensuing year:—President, Dr. J. P. McInerney; treasurer, Dr. Thos. Walker; registrar, Dr. Stewart Skinner.

Sixty-nine cases of measles, including 11 of the German type, were reported in Montreal last week, making a total for the past five weeks of 232 cases.

The sixth annual meeting of the Association for the Prevention of Tuberculosis was concluded at Ottawa on the 29th of March. The officers for the ensuing year were elected as follows: President—Hon. W. C. Edwards, Rockland, Ont. Vice-presidents—Dr. Thorburn, Toronto; Dr. Bayard, St. John; Mr. James Grant, Mr. Perley, M. P.; Mr. James Manuel, Ottawa. Treasurer—Mr. J. M. Courtney, C. M. G., Ottawa. The executive consists of one representative from each province.

The *British Medical Journal,* in its issues of February 3rd and 10th, published a long and laudatory account of Toronto and its public buildings, naturally devoting greatest space to its medical, surgical and allied institutions. The articles are profusely illustrated.

The sections will meet on August 21st, 22nd, 23rd and 24th. Besides the address of the president-elect, Dean Reeve of Toronto University, addresses will be given in medicine by Sir James Barr; in surgery by Sir Victor Horsley; and in obstetrics by Dr. Walter S. A. Griffiths. The lieutenant-governor's reception will take place on the afternoon of August 21st, and many garden parties and other social gatherings have been arranged.

Dr. W. J. Douglas, of Cobourg, died suddenly on March 28th.

Dr. Jakeway, of Stayner, Ontario, died, as a result of an accident, on 18th March, 1906.

Dr. MacGregor, of Riverport, Lunenburg, died on 6th March, 1906, in the 77th years of his age. He was a graduate of Harvard University in 1863.

Dr. Matthew Wallace, of Toronto, died on 3rd March, 1906, in the 57th year of his age. He was a graduate of the Toronto Medical School in the class of 1880.

Dr. George Pringle, 632 Church Street, Toronto, died February 16th, aged 72. He graduated at McGill in 1855, and practiced for many years in eastern Ontario. He removed to Toronto about fifteen years ago, but poor health prevented him from doing much work.

BRITISH MEDICAL ASSOCIATION.

Seventy-Fourth Annual Meeting, 1906.

Toronto.

August 21st, 22nd, 23rd, 24th, and 25th.

Abstract of memorandum for officers of sections:

Meetings of Sections:—The sections will meet on Tuesday, Wednesday, Thursday and Friday, (August 21st, 22nd, 23rd and 24th) at 9.30 a.m., adjourning at 12.30 p.m. each day.

Sectional Committee of Reference:—The president, vice-presidents, and secretaries of each section will form a Committee of Reference, and shall exercise the power of inviting, accepting, declining, or postponing any paper, and of arranging the order in which accepted papers shall be read.

Guests:—Papers by guests will be presented on invitation. If the Committee of Reference desires to invite persons to read papers in the section who are not eligible to become members of the Association, their names should be submitted for the approval of the Council. If it is desired to ask any such persons to attend the meetings of the section and take part in the discussions a general permission to issue such invitations should be obtained. All papers read are the property of the British Medical Association, and may not be published elsewhere than in the *British Medical Journal* without special permission.

Discussions:—Secretaries are requested to communicate to the General Secretary a preliminary statement of the arrangements made for the discussions in the section to be laid before the Council at the earliest possible moment. This should consist of a statement of the subjects selected, together with the names, if possible, of the gentlemen who have undertaken to open the discussions.

Papers:—The offer of a paper should not be accepted on its title alone, and save, under exceptional circumstances, no paper should be accepted for reading until it has been sent to the secretaries.

Secretaries are requested to communicate to the General Secretary of the Association, 429 Strand, London, W.C., not later than June 15th, a complete list of papers approved and accepted for reading.

It is suggested that the secretaries resident in the United Kingdom should collect papers from members there, and the secretaries in Canada should deal with all papers in the Dominion and the United States.

Only titles of papers which have been accepted, and which may be reasonably expected to be read, should be included in the programme of sectional proceedings.

Offers of papers ought not to be accepted in excess of the number likely to be read. Failure to observe this condition leads to many inconveniences and gives rise to complaints of unfair preference.

Report in the British Medical Journal:—A report of the actual proceedings of the section will be published in the *British Medical Journal*, and in any communications addressed to persons who offer papers to be read in a section two things should be made quite clear:—

(1) That papers read are the property of the British Medical Association, and cannot be published elsewhere than in the *British Medical Journal* without special permission.

(2) That the authors of papers not read have no claim for the publication of their papers in the *British Medical Journal*. *Papers cannot be "taken as read."* If they are not read they form no part of the proceedings of the section.

Secretaries are requested to co-operate in preparing the report of the proceedings of their section for publication in the *British Medical Journal*, with the reporter of the *British Medical Journal* appointed to the section, and to hand to him all matters for publication for transmission to the editor of the *British Medical Journal*, 2 Agar Street, Strand, London, W.C.

The attention of authors should be particularly directed to the time limit (see below), and the text of papers submitted for publication in the *British Medical Journal* as part of the report of the section should represent what is actually read to the section.

It is important that each author should hand the text of his paper in proper form for publication to one of the secretaries of the section immediately after it is read. It should be made clear that neglect to comply with this request may result in the omission of the paper in question from the proceedings of the section subsequently published in the *British Medical Journal*.

Time Limit:—The attention of the Council of the Association has been called to the non-observance by readers of papers of the rules to the time limit which is as follows:—"No paper must exceed fifteen minutes in reading, and no subsequent speech must exceed ten minutes." The attention of presidents and secretaries of sections is particularly requested to this rule.

DR. F. N. G. STARR,
DR. D. J. GIBB WISHART,
PROFESSOR J. J. MACKENZIE,
Honorary Local Secretaries.

Retrospect of Current Literature.

SURGERY.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

ANDREW J. McCOSH, M.D. "Surgical Intervention in Benign Gastric Lesions." *New York and Philadelphia Medical News,* March, 17th, 1906.

This contribution practically consists of the writer's conclusions on this new and important branch of surgery and may be given as follows: Many gastric "symptoms," formerly considered as merely functional, are caused by distinct anatomical conditions or pathological lesions. For diagnostic purposes the stagnation test is of much greater value than is any chemical examination of stomach contents. Spasmodic pyloric contraction frequently occurs as the result of derangement of gastric secretion or abrasions of the mucous membrane of the stomach and duodenum. Gastric hæmorrhage frequently occurs without the existence of the typical round ulcer coming from minute abraided spots, which may be scattered about throughout a patch of intensely congested mucous membrane. Not uncommonly, large inflammatory masses, constituting a palpable tumour, may exist, caused by and surrounding an ulcer. Formerly such masses were regarded as malignant. In many a gastroenterostomy was done and a fatal end prophesied. We now encounter some of these patients in a perfect state of health many years later, with complete disappearance of the mass. Based upon much experience, we can now generally at the time of operation, arrive at a correct diagnosis of the character of the masses. Duodenal ulcers are of frequent occurrence. While less common than gastric, they are now supposed to exist in the proportion of 1 to 3. In the great majority of cases of contracted pylorus, whether it be due to spasm, inflammatory hyperplasia of the circular fibres, or stricture with adhesion from an ulcer, a gastroenterostomy will effect a cure, or, at least, markedly relieve the symptoms. The mortality of this operation should not be over 5 per cent., provided that through neglect, the patients have not been allowed to drift into a semimoribund condition. This operation should, however, be done only after a reasonable length of medical treatment has been employed and found wanting. This operation will generally fail to cure cases of simple dilatation with atrophy of the stomach without constriction of the pylorus. That, following gastric operations, there must be, if we strive for perfect results, continuous dietetic and hygienic treatment, extending over months, or even years.

THOMAS GUTHRIE, M.A., M.B., B.C. (Cantab.), F.R.C.S. Eng. "The Treatment of Acute Intussusception." *The Practitioner,* February, 1906.

The great advance in the treatment of this condition may be seen when we compare the results obtained during the last twenty-five years. It is interesting to note that prior to 1895 no case is found in the records of St. Thomas' Hospital, London, of such a condiion, and that from 1875 to 1885 only 18 cases are recorded: while in one year alone, 1901, no less than 21 cases were treated. Of the cases treated during the above decade less than 25 per cent. recovered, while, of those in 1901, we have a recovery of nearly 50 per cent. As regards the methods of active treatment, the only one of any value, apart from cœliotomy, is reduction by means of retrograde distension or inflation. The figures collected for this line of treatment give us a mortality rate ranging from 50 to 100 per cent. The combined methods also give us a very high mortality. Thus, of 10 unsuccessful cases of inflation, in which resort was had later to laparotomy, 8 died and only 2 recovered. As to the results of operative treatment, the statistics vary greatly according to the class of case with which they deal. In this, as in many other acute abdominal conditions, the time element is of the greatest importance. The figures given for those earlier cases in which reduction is still possible show a recovery rate of from 35 to 50 per cent., while, if, owing to delay, irreducibility or gangrene has supervened, little hope of success is presented by laparotomy. Gibson (Ann of Surgery, October, 1900) estimated that 94 per cent. treated within the first twenty-four hours were reducible on section, while only 61 per cent of those treated on the third day were reducible. In conclusion, it may be definitely stated that all the available evidence indicates that for every case of acute intussusception, apart from those advanced cases when the shock of an operation would certainly be fatal, immediate abdominal section is the proper treatment. Should circumstances be unfavourable for operative measures, and the case quite an early one, distension of fluid is worthy of trial, but, under the best conditions, can not be regarded at present as sound treatment.

DR. E. ULLMAN. "A Rare Form of Cyst Formation in the Kidney." *Archives Internationals de Chirurgie,* Vol. I., No. 1, 1903.

According to Kuester, one may classify kidney cysts into three groups: the first embraces those which have certainly arisen through softening of the neoplasm in which microscopically one can usually

find some small remains of tumour. The walls of the cells are fibrous, thickened, and contain frequently lime deposits. In the second group one gets cysts which arise from portions of the calices or of the pelves which have become cut off from their normal position. Nearly always one can find traces of the lining epithelium still remaining. The wall is thick and the contents are frequently represented by slimy, yellowish brown, semi-solid material containing cholesteria crystals and sometimes even pus. The cysts of the third group are believed, according to Virchow's opinion, to arise through a circumscribed interstitial nephritis: in the urinary tubules, which are here and there dilated, can be seen lining mucinous masses.

The author here reports a case of single cyst of the right kidney in a woman 31 years of age. It had caused pain at intervals for two years, sometimes colicky in nature and lasting for an hour; there was no definite hæmaturia. Nephrectomy was done. The specimen is described in detail. It contained a brownish, chocolate-like, slimy mass with thickened walls of a fibrous character. The kidney itself was somewhat atrophied. The cyst filled out the hilus of the kidney, but there was no communication between the cyst and the pelvis. It was roundish in shape, lay in the middle of the kidney substance and was about the size of a fœtal head; it reached from the hilus to the capsule, the two poles of the kidney remaining free. Ullmann comes to the diagnosis histologically that the cyst owed its origin to the isolation of one or more of the calices from the rest of the renal substances, inasmuch as its wall was everywhere lined with epithelium in layers corresponding in appearance to that of the kidney pelvis. The kidney was broadly adherent to the liver presenting thereby the appearance of a tumour of the gall bladder and causing very naturally an error in diagnosis.

J. M. T. Finney, M.D. "Three Years' Experience with Pyloroplasty." *Surgery, Gynecology and Obstetrics,* February, 1906.

In all, thirty-three cases have been operated upon after the method advocated by the writer in 1902. He is convinced that this operation offers greater advantages in cases of pyloric stenosis of benign origin, from whatever cause, than does gastroenterostomy. It is also claimed to be just as efficacious as gastroenterostomy in the presence of a bleeding or active ulcer. The one contra-indication to the operation is atonic-dilatation of the stomach, particularly when associated with dilatation of the duodenum, and in such cases operation is declined. The writer now performs gastroenterostomy only in cases of inoperable

carcinoma, or after pylorectomy. The objection urged against pyloroplasty of its difficulty in the presence of adhesions and dense cicatricial tissue about the pylorus he has found to be more fanciful that real. If one will make use of the procedure insisted upon, that of mobilization of the duodenum, it will be found perfectly possible and often easy to free the duodenum sufficiently to allow of its being brought out readily into the wound. Where there is much hypertrophy about the pylorus in cases of chronic ulcer it is better, as suggested by Rodman, to perform pylorectomy for those cases where the hypertrophy is moderate. It is the writer's custom to make the opening ample, perhaps, as much as 10 cm. in diameter. One of the most satisfactory features of the operation is the almost entire absence of pus and operative nausea and vomiting, due probably to division of the pylorus and the doing away of pyloruspasm. His mortality has been nil in this series of 30 cases.

Edmund Owen, F.R.S.C. "Acute Bone Disease in Children." *Brit. Med. Jour.,* February 3rd, 1906.

In speaking of the development of a long bone the writer makes use of two expressions which are well worth remembering. As is well known, the epiphyses become ossified on to the shaft at puberty or at manhood, and the bone grows more "at what we will call the manhood-end of the diaphysis that at the puberty-end, because it has a longer time for the purpose." An excellent clinical picture of a case is cited, the easiness of making a wrong diagnosis brought out, and the method of making a differential diagnosis is made clear. He strongly advises early operation. To wait until one is sure of finding pus is to let injury be done to the bone which ought not to be. Even should the surgeon open up a bone and find no pus he has done no harm, and he may dress the case in the happy consciousness of the fact that he has done his duty. In all probability pus will be found coming out of the bone opening from the medullary canal a day or so later. The well established reasons for regarding the disease as primarily an affection of the young bone and marrow are given.

William J. Taylor, M.D. "Report of a Case of Hypernephroma." *Amer. Jour. Med. Sc.,* February, 1906.

The points of chief interest in this case were its malignancy, the typical pathological picture, its large size, weight 6½ pounds, and the absence of hæmaturia. Operation relieved the man's condition for some four months when symptoms recurred, and death ensued a little over six months after operation, and about one year and a half from first appearance of symptoms.

MEDICINE.

UNDER THE CHARGE OF JAMES STEWART, F. G. FINLEY, H. A. LAFLEUR AND W. F. HAMILTON.

J. Everett Dutton and John L. Todd. "First Report of the Trypanosomiasis Expedition to Senegambia (1902)." Memoir XI., *Liverpool School of Tropical Medicine.*

During nearly a year occupied by the Expedition, the authors were able to study the trypanosomiasis in men and horses; they were at this time unsuccessful in attempting to transmit the disease from infected to healthy animals by means of biting flies. Of natives and others examined, six cases of infection were found in over a thousand examined, but the authors recognized at this time that this percentage was much lower than was actually the case.

They found ten out of thirty-six horses infected with the Gambian Horse Trypanosome (T. dimorphon), and this organism they studied experimentally, along with the form from the human beings, but without being able to determine the identity of the two forms. They found trypanosomes and other flagellates in various animals, such as frogs, tortoises, birds and mice.

Dutton, Todd and C. Christy. "Reports of the Trypanosomiasis Expedition to the Congo, 1903-1904." Memoir XIII. *Liverpool School of Tropical Medicine.*

While engaged on the work described in the last paragraphs, Dutton and Todd were recalled from Senegambia and sent to the Congo. Here they came in contact with many cases of trypanosomiasis, from whom the parasite was inoculated on experimental animals, and they found that laboratory animals were rather insusceptible, that when they did take the disease, the symptoms and course were very chronic, and that there was a regular periodicity with which the parasite could be found in the peripheral blood of the animals. From all their observations at this time they found no reason to suppose that the trypanosome of the Congo was a form different from that found in Gambia.

At Leopoldville they made their headquarters while conducting extensive investigations upon the "sleeping sickness," and they were able to conclude that the disease was truly trypanosomiasis, and that further, there were different types of disease which, while all trypanosomiasis, often failed to give the symptoms described as "sleeping sickness" symptoms. These different forms probably result from various degrees of severity of infection, and from the patients being seen in different stages. Many months can elapse after infection before

any symptoms are apparent; perhaps, owing to this fact, the authors were unable to find a true epidemic of the disease, although when on the Gambia six infections were found in a thousand people, and the Congo gave forty-six. The authors did not think that death occurred from the trypanosomes alone, since in nearly all autopsies, a secondary infection was definitely present.

The periodicity with which the parasites appeared in the peripheral blood was notable, but did not correspond to changes in temperature or pulse.

DUTTON, TODD and CHRISTY. "The Congo Floor Maggot." *Ibid.*

The authors found in the floors of dwellings and under beds a blood-sucking maggot, which fed at night, and proved to be a species of the Muscidæ, hitherto known, but whose habits of parasitism had not been observed.

DUTTON, TODD and CHRISTY. "The Cerebro-Spinal Fluid in Sleeping Sickness (Trypanosomiasis): 104 lumbar punctures. *Ibid.*

The authors conclude that in some cases the parasites do not find their way into the cerebro-spinal fluid, but that if they do so, early in the disease, meningeal symptoms are apt to predominate; once in the fluid, they may again disappear from it, and periodicity in the numbers present in the fluid does not necessarily correspond with that of the blood. The tendency to infection of the cerebro-spinal fluid is greatest in the late stages of the disease.

H. WOLFERSTAN THOMAS and STANLEY F. LINTON.. *Ibid.* "A comparison of the Animal Reaction of the Trypanosomes of Uganda and Congo Free State Sleeping Sickness with those of Trypanosoma Gambiense (Dutton).

Thomas and Linton experimented with an enormous number of animals of different sorts, mice, rats, guinea-pigs, cats, dogs, monkeys, sheep, goats, horses, and donkeys, and found that the same chronic form of disease was produced by the parasites from all the above mentioned sources, and they concluded that the animal reaction and morphology indicate that Trypanosoma Gambiense is the causative form of the Uganda and Congo Free State trypanosoma fever and sleeping sickness, whether the organism were obtained from blood or cerebro-spinal fluid. They found no acquired immunity against infection, and no transmission of immunity to offspring.

H. W. Thomas and Anton Breinl. "Trypanosomes, Trypanosomiasis and Sleeping Sickness." Memoir XVI., *Liverpool School of Tropical Medicine.*

These authors studied carefully the cases of sleeping sickness which had been transported to England, and combined the work previously done with Trypanosoma Gambiense. In additions to the findings of Thomas and Linton, they found that inoculation of baboons was possible, with chronic course and fatal termination; the periodicity occurred in animals as well as in man; no attenuation of the virulence of it was obtained by infecting resistant animals, though the virulence sometimes increased in a susceptible animal. In the horse the disease lasted as long as twenty eight months; and they did not find any morphological changes in the parasite after passing through hundreds of animals during three years.

Much attention was paid to a comparative study in infected animals of various forms of trypanosoma, and determined efforts made to cultivate the parasite in media after the method of Novy and McNeal. *T. lewisi* and *T. brucei* were successfully cultivated, and other forms have been kept alive in cultures even to a time of more than two months.

With regard to the treatment of trypanosomiasis, the authors tried many drugs without benefit; the most useful drug is atoxyl, a metaarsenic anilin compound. In animals, by giving large doses, and by continuing those after the necessity for their administration had apparently disappeared, the effects were found to be good. Ehrlich and Shiga's experiments of trypanroth were repeated and verified, and a combination of atoxyl and "trypanroth" was found also to be useful.

Careful autopsy reports of human and animal cases are given by these writers: of the great amount of work embodied in this report, we have given in this abstract, no adequate impression.

J. Everett Dutton (the late) and John L. Todd. "The Nature of Human Tick Fever in the Eastern part of the Congo Free State." Memoir XVII., *Liverpool School of Tropical Medicine.*

This report is the work of Dr. Todd, as the lamented death of Dr. Dutton threw upon his surviving friend the work of publication of their common work; both had suffered from relapsing fever.

In November, 1904, a few days before Ross and Milne published their notes on tick fever in the *British Medical Journal*, the authors telegraphed to Liverpool that they had found a spirochæte to be the infective agent of tick fever of the Congo Free State, and that they

had been able to infect monkeys by the bite of ticks. The spirochæte is probably *obermeyeri,* can be transmitted by the bite of the tick, and in one case the authors were successful in transmitting the parasite by the bites of young ticks hatched in the laboratory from eggs laid by infected parents. The temperature chart of the disease in human beings is very characteristic; during two to four days high temperature with moderate remissions, then a drop to normal, where it continues for several days, after which there is a repetition of the febrile period, this being repeated again and again. In past times, this has always been considered malarial, and, as the therapeutic test was relied upon, the subsidence was considered a proof that it was the action of quinine on malaria, and the mistake was thus perpetuated. Experimental disease in monkeys and cases occurring in natives are recorded clinically and the reports of blood examinations given, with the morphology of the spirochæte and the tick (Ornithodorus), and notes of the distribution of the latter. The authors considered that a developmental process is carried on in the body of the tick.

DUTTON and TODD. "Gland Puncture in Trypanosomiasis." *Ibid.*

The authors found in their investigation of native cases that by far the most efficient method of determining the presence of trypanosomes is by puncture of the lymph glands, and examination of the gland juice; although, of course, even this is not an infallible method.

J. DRESCHFELD, F.R.C.P. "On Some of the Symptoms and Treatment of Graves' Disease." *Medical Chronicle,* January 1906.

With reference to treatment the author has not found success to follow the use of thymus gland extract; he has not tried adrenalin, considers that in some cases thyroid extract does harm, and gives his own observations in support of the use of antithyroid serum (Moebius) and thyroidectin, which is obtained from the blood of a thyroidectomized animal. Of 21 cases, 10 were cured, six improved. The author gives it by the month, 10 minims thrice a day and gradually increases the dose to 25 minims if the lower doses are not effectual. Care must be taken lest hyperthyroidism occur. He repeats, also, the figures of Kocher's wonderful series of cures by surgical treatment. In preference to the usually employed blood serum of sheep whose thyroids have been removed, Hallion, in *La Presse Medicale,* November 1st, 1905, advises a French modification, which is a glycerinated preparation of the entire blood. Referring to the symptoms of Graves' disease, Dreschfeld points out that dermography is a very constantly present

symptom, which is often of use in the case of atypical nature. It was present in every case of his series, and in the severer ones was really an urticaria factitia.

F. Kaliski (Breslau). "On a New Test of the Stomach Secretion without the use of the Stomach-tube." *Deutsche Medizinische Wochenschrift,* February 1st, 1906.

The author refers to Boas' conclusion that alkalinity of urine after washing of the stomach or vomiting points to hyperacidity, and that unchanged reaction in the urine under the same circumstances indicate the production of organic acids; this, by the way of indicating the unfailing correspondence between acidity of the urine and of the stomach-juices. He refers to Sahli's test of glutoid capsules, which were dissolved by pancreatic juice, but not by pepsin and hydrochloric acid. The next step was the use of gold-beater's skin, which can be dissolved only by pepsin and hydrochloric acid at body temperature, and is impervious to pancreatic juice and lactic acid. Filling little sacs with potassium iodide, and tying them with "fibrin threads," the solution occurred and the saliva showed the presence of the iodine immediately. A further modification was the use of dental rubber for the sacs and catgut for the tie. This is the so-called "desmoid reaction" of Sahli. The author uses 4 cm. squares of dental rubber, covered with talc powder, lays in the middle the chemical to be used, twists a neck on the sac, and ties it with 00 catgut, taken from cold water. As soon as the sac is so made, he drops it in water, to determine that it does not leak, and to be assured that it is of heavier specific gravity than the fluid in which it will find itself in the stomach. To fill the "capsules," he uses 3 grs. potassium iodide, and tests the saliva for iodine; a second "capsule" is filled with methyl blue (¾ gr.): this produces no change in the saliva, but colours the urine blue: the use of glacial acetic acid and heat may be needed to produce the blue colour in the urine test.

Certain laboratory tests were made to determine the effect of artificial solutions upon the "capsule." HCl .5 per cent. in 24 hours in the incubator had no effect; .25 per cent. HCl and pepsin dissolved them in 10½ hours; lactic acid and pepsin had no effect; the stomach juice dissolved them in time varying according to the acidity and concentration.

Thirty-two healthy cases, without the test-meal, gave the reaction in an average time between 8 and 12 hours. Twenty-four cases of

disorder of the stomach were tested, controlled by the use of the tube and the test-meal.

Where free HCl was not present, the reaction was not obtained; all of his cases of carcinoma failed to give the reaction. Apepsia gastrica will equally fail to give the test, and the capsule will be expelled later in the fæces. In a general way, a deep blue reaction in 4 to 7 hours points to hyperacidity; 7 to 12 hours suggests normal acidity. The appearance of the test on the next day suggests subacidity, or motor insufficiency, and, as above stated, the absence of the reaction points to anacidity, unless in the unusual case of hypermobility where the capsule is passed into the duodenum by the great activity of the stomach. The same result occurred in a case which had had gastro-enterostomy performed.

J. McC.

PATHOLOGY.

UNDER THE CHARGE OF J. G. ADAMI.

ARTERIOSCLEROSIS. A Review of the work in 1905.

The literature which has accumulated in 1905 on the subject of arteriosclerosis is a striking evidence of the active work accomplished in medical research. Arteriosclerosis forms probably one of the most difficult of pathological studies, so that with even all the investigations in this subject we are yet far from a solution of the problem. Probably one of the most important obstacles to the proper understanding in the work done and one that has led to such a confusion of ideas on the subject, is the definition of arteriosclerosis.

Jores formulated a definition of arteriosclerosis, and regarded only those cases in which microscopically the thickened intima of the vessels showed a longitudinal splitting of the internal elastic intima. That is, under his definition, the diagnosis of arteriosclerosis was only to be made with the microscope. Barr includes arterio-capillary thickening and also atheroma and calcification of the larger vessels under arteriosclerosis; while Marchand looks on it, as the process of the arteries in which the walls show nodular thickenings—principally in the intima—and one which is prone to undergo degeneration of a fatty, sclerotic or calcerous nature. The clinical diagnosis of arteriosclerosis is in the same state as when Lobstein named the disease, thirty-one years ago, little or no differentiation being made clinically between the different types.

However, our knowledge of arteriosclerosis has been materially enhanced by combining the clinical histories of cases with the pathological findings. Thus Marchand concluded from his post-mortem material that arteriosclerosis followed long continued tension, local lesions, toxic and infective processes and general alteration in the nourishment of the vessels. Wiesal found definite direct action of the typhoid toxin on the muscle fibres of the media, and also that the endothelial cells of the intoma were stimulated in growth. Barr, on the other hand, believes that increased arterial tension leads to arteriosclerosis, in that the arteries cannot then enter the state of "repose" between the pulsations, for in this "repose,' he says, the arteries derive their nourishment.

It was hoped that the animal experiments with adrenalin would clear up some of the obscure points in the etiology of arteriosclerosis, However, up to the present experimenters are not in unison as to the *modus operandi* of the adrenalin arterial disease. They are all more or less agreed on the pathological findings in the arteries after the use of adrenalin, but the conclusions how this is brought about, vary. Fischer finds extensive necrosis in the media of the arteries, and holds that this is produced by a direct poisoning of the part. He also points out that these weakenings of the media lead to aneurysmal dilatations of the wall. Sturli agrees with this and points out that such lesions differed entirely from arteriosclerosis as found in man. Erb, too, believes in the necrotic theory, and holds that the vasa vasorum play no part in the process. On the other hand again, Lissauer lays most stress on the contraction of the vasa vasorum, following the inoculation of adrenalin, leading to a diminished nourishment of the arterial wall. Later observers are inclined to believe that each of the factors plays a part in the production of the arterial disease, and that the combined toxic effect on the muscle fibres as well as the narrowing of the vasa vasorum leads to degenerative changes. That increased pressure within the artery can alone lead to the weakening of the vessel wall is discountenanced—unless it be taken that this increased pressure, stretching the wall causes a narrowing of the vasa within it, and in this way diminishes the nutrition of the middle and outer coats.

Klotz has recently shown that in all these cases the calcification which is so common in all arterial diseases is a direct outcome of the fatty degeneration attacking the different tissues. The muscular elements are found to be the first to undergo fatty degeneration, although in a few cases the internal elastic lamina primarily shows this change. In the case of the common post-mortem finding where a fatty change

is noted in the intima, this is shown to result from a fatty degeneration of the deep muscular elements in the intima, without any change being noted in the media. Ribbert believes that the fatty change in the intima is due rather to the stretching of the vessel wall so that the endothelial cells are pulled asunder, letting in the fat-laden lymph. This lymph, in some unexplainable way, deposits its fat in the deeper layers of intima.

Branson and Michels and Weber have added new cases to the already extensive literature on endarteritis obliterans. The cases reported were among Polish Jews working in tobacco factories, and themselves heavy cigarette smokers. The authors rise the question, whether in these cases tobacco was the causative agent. Lazarus Barlow believes, that such cases have much regenerated tissue in the intima, and showing no signs of calcification, are of syphilitic origin. This is, however, too sweeping a statement, as syphilis can be ruled out in many. As to the origin of the newly proliferated tissue the controversy still exists, whether it consists of endothelial cells or connective tissue. Baumgarten is a strong supporter of the former theory.

The views on syphilitic arteritis have not been changed from those enunciated by Chiari. The lesions are primarily a mesarteritis following the smaller blood vessels, with a secondary endarteritis that seldom calcifies.

As to the treatment of arteriosclerosis, Professor Romberg points out that digitalis seems still to hold the highest rank, and is favourably given in cases where there is not actual or threatened haemorrhage, Sawada, however shows that in cases of arteriosclerosis with involvement of the kidney the arterial tension is not high, and digitalis may be given in small doses with good results. Groedel's method of giving a couple grains of freshly powdered digitalis leaves once or twice a day is particularly recommended. When cardiac weakness from coronary sclerosis is combined with abdominal plethora the arterial pressure is often raised. In such cases active purgation is valuable. For the general treatment of arteriosclerosis the best medicinal remedy is potassium iodide. This does not, according to Professor Romberg, reduce blood pressure, nor has it a direct action upon the pathological process. He believes on the ground of Mueller and Inanda's experiments, that it reduces the viscosity of the blood and so lessens the work to be done in the vascular system. It is not to be given when there is œdema of the lungs, or when arteriosclerosis is complicated by Graves disease.

Of great importance is the regulation of the patient's habits. Arterio-

sclerosis is regarded by Marchand as a nutritional affection of the vessel wall resulting from wear and tear. It is therefore essential that any source of added strain upon the vascular system be avoided. Sleep is also added as an important necessity and hypnotics may be indicated for three or four consecutive nights until natural repose is established.

With regard to diet, Romberg treats each case individually according to the state of nutrition and condition of the alimentary canal.

O. K.

Prof. Hans Meyer. "The Theory of Narcosis." *Journal A. M. A.*, January 20th, 1906.

In the first lecture of the Harvey Society course, Prof. Hans Meyer, of Vienna, advances a theory of narcosis which he states as follows: "The narcotizing substance enters into a loose physico-chemical combination with the vitally important lipoids of the cell, perhaps with the lecithin, and in so doing changes their normal relationship to the other cell constituents, through which an inhibition of the entire cell chemism occurs. It also becomes evident that the narcosis immediately disappears as soon as the loose, reversible, tension combination dependent on the solution breaks up. It follows, further, that substances chemically indifferent, as the volatile saturated hydrocarbons, can act as narcotics." It is the distribution relationship, the so-called distribution coefficient, of the narcotics between fatty and watery solutions that is the determining factor of narcotic action, and with the increase in this distribution coefficient there is an almost parallel increase in the narcotic strength, that is, decrease in the molecular concentration necessary for narcosis, as he shows by a table deduced from experience with a number of well-known narcotics. The apparent exceptions to the general rule are readily explainable by the naturally inexact methods of estimation or narcotic power. As all living cells contain lecithin, a lipoid body, this theory explains why all cells capable of stimulation are depressed by these narcotic substances. Narcotic drugs are complex substances and, therefore, that some of them produce other effects, sometimes even masking their narcotic action, is not remarkable. It is not attempted, moreover, to explain every type of narcosis by this theory. It is probable that other disturbances in chemical equilibrium may occur to inhibit the function of the cell, and that substances, such as morphin, are narcotic otherwise than through the "alcohol lipoids," and the same may be true of the very remarkable narcosis from magnesium salts, lately discovered by Meltzer.

W. T. Councilman "The Pathology of the Kidney." *Journal A. M. A.*, January 13th, 1906.

Dr. Councilman notices the complex structure and circulation in the kidney, its excessive blood supply, its marked capacity for repair with slight capacity for complete regeneration of tissue, and the steady impairment of its structure with advancing age, due not only to arterial disease and wearing out, but also to the cumulative effect of slight lesions with constantly increasing inability to repair. The most easily understood kidney lesions are focal ones from bacterial invasion, either by way of the blood or through the urinary tract. Chronic congestion and urinary obstruction may also cause damage through pressure and interference with the circulation. How the damage constantly accompanying diffuse arteriosclerosis is produced is not known. The changes consist in the destruction and degeneration of the parenchyma and increase of interstitial tissue, the latter being now generally accepted as secondary to the former. There is no evidence of an independent increase of connective tissue in arteriosclerosis. It is probable that the condition in the kidneys is the result of many factors rather than of any one. The greatest difficulty in understanding the pathology of the kidney is found in the acute, subacute and chronic diffuse lesions not connected with changes in the flow of blood or urine, nor with the immediate action of bacteria. Among these are noticed the acute interstitial non-suppurative nephritis due to the disposition and proliferation in the renal intestitial tissue of lymphoid cells from the bone marrow, spleen, etc., which occurs in acute infectious diseases, notably in the acute exanthemata. Why these cells accumulate in the renal veins is not known. Epithelial degeneration in varying character and degree is the most frequent condition met with in all cases of diffuse nephritis, often exquisitely focal and sometimes remarkably selective. Thus, in diabetes, it only affects the cells of Henle's loops. The degeneration may range from very slight change to complete necrosis. Of the severer lesions of the kidney due to the diffuse action of soluble substances, Councilman notes one group in which glomerular lesions are most prominent. The most common cause of the glomerular affections, he believes to be the acute infections. They may be acute, subacute or chronic. The other form of chronic nephritis, chronic intestitial nephritis, causing a slow destruction of all parts of the kidney, the glomeruli least and secondarily, with a marked increase of connective tissue, is usually accompanied by arteriosclerosis. It is a composite disease; not one organ, but many are affected. In this connection he gives the results

of the anatomic study of the autopsies in cases of nephritis at the Boston City Hospital during the past ten years, and notices especially the marked heart enlargement in this form. The cases of amyloid infiltration are closely associated with it, but there is absence of heart hypertrophy. In the cases of chronic glomerular (parenchymatous) nephritis there also appeared to be some of cardiac hypertrophy, though to a less degree. The frequent association of acute glomerular nephritis with pneumococcal infection is remarked, as also that of the acute interstitial form with diphtheria. Certain conclusions are forced on one, he says, by the careful examination of the kidneys in a large number of more general morbid conditions. Kidney diseases can not be considered as an entity; even the simplest bacterial lesions are secondary to infections elsewhere. Every acute infection probably leaves its traces in the kidney. Albumin and casts, though they mean injury to the organ, do not always indicate the severity of the condition, and too much importance may be attached to their occurrence. It is difficult to explain the association of lesions shown at autopsies, the cardiac hypertrophy and œdema, and the numerous hypotheses that have been offered show our ignorance. It is not probable that anatomic studies can throw much light on the obscure problems of renal pathology. Clinical, pathologic, chemical and anatomic methods must all be used, and the hypotheses offered tested by animal experiments. Only thus, and by reducing the questions to their simplest components, can such knowledge of chronic diseases as will permit us to form acceptable hypotheses for their explanation be obtained.

At a meeting of the Saskatchewan Medical Association held at Saskatoon, on March 15th, 1906, it was moved by Dr. Seymour, seconded by Dr. Kemp, and carried unanimously: That the Secretary of this Association be instructed to memorialize the Dominion Government as to the necessity of taking immediate and definite action with regard to the treatment and prevention of tuberculosis among the Indians on reserves and in the Industrial and other schools in this Province by the establishment of sanatoria in the vicinity of Indian Reserves. Attention is directed to the amount of tuberculosis existing among the Indian children attending schools and the necessity of removing infected children to sanatoria where they may be treated separately, and be no longer a source of transmitting the disease to others, and also that cases of tuberculosis occurring among adults and others not in the schools may be properly isolated and treated.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

The eleventh regular meeting of the Society was held March 2nd, 1906, Dr. F. R. England, President, in the Chair.

SPLENECTOMY.

A. E. Garrow, M.D., presented before the Society a living case of wandering spleen, and gave the following history. The patient, a Greek, aged 32, female, had malaria fifteen years ago, and five years ago commenced to complain of pain in the left hypochondrium, since which time she has been practically more or less invalided. The patient was referred to the gynæcological department of the Royal Victoria Hospital with a tumour which was supposed to be pelvic. Dr. Chipman, however, recognized the spleen, and by posturing, the organ could be made to glide into various parts of the abdomen. Operation was undertaken some weeks ago. A few adhesions were found to connect the organ with the small intestines and also with the parietal peritoneum. There was a large and firm adhesion, chiefly from the omentum, covering the inner surface as a sort of sheath over the true pedicle which was very much enlarged, containing many enormously distended vessels. The organ, after being delivered through the incision, was readily removed by first tying off the omentum and afterwards ligating the pedicle. Since the operation convalescence has been uneventful, with the exception of two or three slight attacks of pain felt in the left hypochondrium and also referred to the epigastrium, which were not associated with any rise in temperature except in one instance. Rest in bed was sufficient to relieve this symptom. The most striking feature since operation is the marked change in colour; she was dark and swarthy, but since the operation the colour has improved steadily. She is now practically white, with the exception of one or two spots which still remain on the forehead. With regard to the blood count, before entering the ward it was as follows, red cells, 2,500,000, hæmoglobin 35 per cent., white cells 4,200. Just before operation the count was, red cells 3,150,000, hæmoglobin 40 per cent., white cells 4,000. After the operation, red cells were 3,000,000, hæmoglobin was 40 per cent., white cells 20,000. A marked leucocytosis followed the operation. At present the blood count shows 4,000,000 red cells, hæmoglobin 80 per cent., white cells 12,000. A differential count made to-day shows 60 per cent. polymorphonuclear cells, 35 per cent. lymphocytes, five per cent. large mononuclears; no eosinophiles, and no poikilocytosis.

F. G. Finley, M.D.—I would like to ask Dr. Garrow if he could give us any opinion as to the probable cause of the splenic enlargement: whether it may be possibly a case of splenic anæmia, as the improvement in the character of the blood after operation may suggest, or had the malaria anything to do with it, or was there any pathological condition present to account for the condition?

C. B. Keenan, M.D.—As far as could be made out from the sections of the organ there were no changes suggestive of splenic anæmia or any malignant disease. The sections, however, showed slight fibrosis, but this was of the ordinary type and did not show any replacement of the spleen pulp by the endothelial type of cell which may be found in splenic anæmia. Scrapings from the spleen did not show any malarial organisms. One cannot from the sections, I think, give any opinion as to the origin of the cause of the enlargement. The pathological specimens show nothing very especial, only a couple of infarcts, one very old and one more recent.

A. R. Pennoyer, M.D.—I would like to ask Dr. Garrow's own feeling with regard to the ultimate prognosis.

A. E. Garrow, M.D.—As to the prognosis in this case, I would merely point to the patient to indicate the marked improvement which has taken place since the operation. She is free from abdominal distress, and apparently is enjoying herself much more than formerly, when she was practically an invalid; but as to the future blood changes which may develop we have only the experience of other and older cases, where the continuous improvement in the patient's general condition has been permanent. I think this has been well established, except, of course, in connexion with splenic anæmias.

RUPTURED AORTIC ANEURYSM.

Kenneth Cameron, M.D.—There are many points of interest about the history of the patient from whom the specimen which Dr. Gillies will show you was taken. The man had reached an age, 77 years, at which it is unusual to find an aneurysm, he presented but few symptoms that would draw one's attention to his serious lesion, and his death was so tragic that I trust none of you will ever be situated as I was at the time. The old man had always enjoyed good health and had managed and worked a farm in Manitoba until within two years of his death. I saw him, for the first time, in June, 1904, when he was suffering from severe pain in the back, which he attributed to having been thrown out of a carriage about two months before. The pain was located on the left side over the angle of the scapula and

radiated to the precordial region. It was usually worse at night and after exertion. The precordial pain was always increased after taking food, and was associated with flatulence and constipation. In the examination of the chest there was nothing that attracted my attention to the actual conditions of affairs. A mixture of bicarbonate of soda and nux vomica gave complete relief to all the symptoms.

In October, 1905, during a long and fatiguing journey, he suffered from severe diarrhœa, but there was no pain in the back.

In February last, the old pain had returned, and had been very bad for several days when I saw him. The point of maximum intensity seemed to be higher up than before, along the spine and upper border of the scapula. The pain would shoot down the arm and around to the precordial region. The same gastric symptoms were present, but were more severe. Examination again failed to draw my attention to his lesion, there was no dysphagia, and the pupils were equal. I gave him morphia and hyoscine, hypodermically, which afforded him a comfortable night's rest. I may say that before giving him the drug, I had felt the left pulse and found it almost imperceptible. After he had gone to sleep I felt the right radial pulse and found it of good volume, which I attributed to the rest and relief from pain. Next day he was fairly comfortable, and asked for the mixture that had helped him before. Unfortunately for him one of the members of his household had been completely relieved of symptoms referable to the stomach by gastric lavage, and both he and his relatives seemed to wish that that method of treatment should be tried. I inserted the tube nearly a foot without any difficulty, when it would go no further. I withdrew it and tried again, when a gush of blood of about eight or ten ounces, came from his mouth. The patient got up and walked across the rooom, crying out with intense pain in the left side, and then collapsed. There was complete stoppage of respiration, though the heart kept on beating for fully five minutes, during which time artificial respiration was performed.

OSTEOMYELITIS.

A. E. Garrow, M.D., read a paper on this subject having special reference to the treatment of the condition. This paper appears on p. 246 of this number. In connexion with the paper Dr. Garrow presented a living case of a boy who had suffered from acute infective osteomyelitis which was multiple, beginning as a case of mastoid disease and followed by the formation of an abscess in the tibia, as well as the formation of pus in the os calcis. The case was operated

upon within eight or ten days after the onset of the disease when the bone was opened, trephined and the cavity scraped thoroughly, disinfected and an attempt made to secure healing by packing the cavity with gauze. Reinfection occurred, and the cavity was reopened, filled with the iodoform preparation and closed without drainage. Healing took place within ten or twelve days and has remained permanent since a period of almost three years. The treatment which was successful in the heel was simply curetting and packing with gauze.

F. J. Shepherd, M.D.—I would like to congratulate Dr. Garrow on his exhaustive paper on this subject. Of especial interest is the history he gives us in regard to this osteomyelitis; years ago we all thought that the infection was from without and not from within, as it is now known to be. I have seen not a few cases where the diaphysis of the bone has come away; in one case the tibia, and in another the radius, and in still another the whole lower jaw. In these cases the epiphyses are not affected. With regard to treatment advocated by Dr. Garrow, this has been tried pretty much all over the world since Mosetig's paper came out. He applied his treatment more to the joints than to cavities in bone. In this connexion I have thought we have been very long in learning lessons from the dentists, the filling of cavities by the different amalgams after getting rid of the diseased bone, is a pretty old method, and is said to have been used in ancient Egypt. I have not seen anywhere the success which Professor Mosetig has had in his cases. In most of the cases I have seen success only followed several trials. It is a very difficult thing to disinfect a bone cavity. Dr. Garrow's paper is a very instructive one, and I beg to congratulate him on having so clearly explained the whole subject.

SUBACUTE BLEPHARO-CONJUNCTIVITIS.

Fred. T. Tooke, M.D., read a paper upon this subject.

W. G. M. Byers, M.D.—I would like to congratulate Dr. Tooke on his comprehensive treatment of this now well recognized clinical entity. I prophesy that the contribution, which is distinctly needed in English, will be most favourably received by ophthalmological workers.

W. H. Mathewson, M.D.—I also would like to congratulate Dr. Tooke, and to point out that this is one of the now rapidly growing number of diseases a bacteriological examination of which gives the clue to treatment. These cases clearing up so rapidly under zinc, especially where there is an ulcer, very probably save the eyesight in a large number of cases.

HYSTERICAL SWELLING OF HAND.

A. H. Gordon, M.D.—This case report will be found in the May number.

A. E. Garrow, M.D.—I would like to ask what Dr. Gordon understands by hysterical swelling. He speaks of a much enlarged hand, but apparently eliminates lymphatic œdema. Was this of the nature of the so-called angiotic œdema often present in such patients, or not?

A. H. Gordon, M.D.—So far as descriptions go of this condition known as angio-neurotic œdema, it is associated frequently with urticarial attacks and also with gastro-intestinal disturbances, and not always associated with a definite history of hysteria. As to what the actual pathological condition is, it seems to me an extremely difficult question to answer. The fact that there is no pitting on pressure would exclude any effusion outside the lymph or blood vessels, and the fact that the limb is cold would, it seems to me, indicate that it is not an arterial hyperæmia, so the only possibility left is that it is a paresis of either the terminal venous radicles or of the lymphatic vessels with the fluid remaining in them. It is the only explanation that occurs to me under the circumstances.

The twelfth regular meeting of the Society was held Friday evening, the 16th of March, 1906, Dr. F. R. England, President, in the Chair.

The paper of the evening was read by J. L. Todd M.D., a graduate of McGill, Class of 1900, who had just returned from a two years' sojourn in the Congo, where he had been investigating the Sleeping Sickness prevalent in that region, for the Liverpool School of Tropical Medicine.

Dr. Todd illustrated his address by the use of lantern slides, and microscopical specimens of the trypanosome. Dr. Dutton, who was associated with Dr. Todd in his researches, discovered in 1901 for the first time a trypanosome in the blood of a European on the Gambia. In 1902 several cases in Europeans had been reported from the Congo Free State, and the Liverpool School of Tropical Medicine took up the study. The district traversed by the Commission covered an area of one-third the size of the United States.

In all 6,500 natives were examined, whose glands showed signs of enlargement other than that due to known causes. The glands of early trypanosomiasis are enlarged and in their secretion trypanosomata are usually found.

F. J. Shepherd, M.D.—In moving a vote of thanks to the reader

of the paper, Dr. Shepherd congratulated Dr. Todd on his excellent and instructive lecture.

James Perrigo, M.D., seconded the motion, and in doing so also expressed his appreciation of the facts brought forward by the lecturer, especially the pictures presented which, he said, were a perfect clinical picture of the disease.

A. Lapthorn Smith, M.D.—I would like to ask Dr. Todd what precautions he took to preserve his own health; what his colleague, Dr. Dutton, died of, and if the disease can be acquired in any other way except by the tsete fly; also if there is any hope of exterminating the pest, such as is being done with the mosquito.

H. A. Lafleur, M.D.—When one listens to a discourse such as this, and sees pictures which illustrate all conditions of things in the research, it is hardly possible to realize the appalling amount of work which such an exhibition as given to-night must mean. And with it all we remember that Dr. Todd is a graduate of a Canadian University.

J. L. Todd, M.D.—In the first place, as to how to keep one's health. The Liverpool School of Tropical Medicine was instituted, with just this purpose in view, to teach natives in these countries and others living therein so to place themselves and their surroundings in a hygienic atmosphere. The measures for the prevention of malaria may, properly speaking, be divided into two—the public measures, the filling up of marshes, drains,—and the personal measures, the careful and incessant use of mosquito netting, and quinine after exposure. The mosquito which gives malaria bites only after nightfall, therefore, during the daytime no particular care is necessary; but at nightfall all precautions should be taken, such as the wearing of high boots. These insects are shy, and are disturbed by the least movement, hence they bite when one is sitting or standing still. At dinner we wore long bathrobes of a double thickness, and generally retired about 9 o'clock. About 100 per cent. of the children under 10 are infected with malaria, and are the ever present foci of infection. With regard to the use of quinine, one should avoid it as much as possible; but when there is evidence of contact it should be taken every third, fifth, seventh and ninth day, in from five to six grain doses. In not one of the many expeditions that our school has sent out has there been a case of malaria. I have been with the school three years, and it has been carrying out these expeditions for ten years. We always boil the water—filters are no good—and if this is properly carried out there is absolutely no danger from anything. As for a means of exterminating the fly I do not think it would be possible to advise any means

of exterminating it. With the mosquito water must be present, but in this case the larvæ are deposited on the ground, are viviparous, and crawl, perhaps for two hours, until they reach a clump of grass or stone where they hide and turn into pupæ, which develop in about six weeks. One larva is deposited at a time as a rule. Dr. Dutton died as the result of tick fever. He had a very severe attack of the disease while we were at Kasongo which left him extremely weak, and, instead of resting, he kept on with his work, sometimes from six in the morning till all hours at night. He had quite recovered from the fever, but the nervous breakdown which followed was altogether too much for him.

SASKATCHEWAN MEDICAL SOCIETY.

The physicians of Saskatchewan met in Saskatoon on March 14th, 1906. They organized a provincial medical association and decided to apply to the provincial legislature for legislation regarding medical regulations and the qualification and examinations of candidates for the profession.

Among those present were A. B. Stewart, M.D., Rosthern; G. A. Charlton, M.D., Regina; E. M. Spence, M.D., Prince Albert; J. D. Lafferty, M.D., Calgary; J. W. Kemp, M.D., Indian Head; A. C. McKean, M.D., Rouleau; A. W. Allingham, M. D., Broadview; M. M. Seymour, M.D., Regina; H E. Nibblet, M.D., Abercrombie; W. Henderson, M.D., South Qu'Appelle; A. J. Dixon, M.D., and G. R. Peterson, M.D., H. D. Weaver, M.D., W. J. McDay, M.D., J. A. Valens M.D., of Saskatoon; J. E. Bromley, M.D., H. E. Monroe, M.D., P. D. Stewart, M.D., S. Dickey, M.D.

The officers elected for the ensuing year were as follows: Hon. president, M. M. Seymour, M.D., Regina; president, J. W. Kemp, M.D., Indian Head; first vice-president, T. C. Spence, Prince Albert; second vice-president, H. Eaglesham, M.D., Weyburn; secretary-treasurer, G. A. Stewart; A. W. Allingham, M.D., Broadview; C. M. Henry, M.D., Yorkton. Standing committees were elected for a term of years as follows: Committee on credentials—W. J. McKay, M.D., Saskatoon; W. R. Sparling, M.D., Battleford; A. R. Turnbull, M.D., Moose Jaw. Committee on public health, etc.—A. C. McKean, M.D., Rouleau; P. D. Stewart, M.D., Saskatoon; J. D. Connell, M.D., Indian Head. Committee on legislation, two to be elected annually—H. E. Monroe, M.D., Saskatoon; H. E. Nybblet, M.D., Abercrombie; W. Henderson, M.D.,

South Qu'Appelle; D. Low, M.D., Regina; J. R. Bird, M.D., Whitewood; A. W. Allingham, M.D., Broadview. Committee on publication—W. Elliott, M.D., M.L.A., Wolseley; A. G. Denmark, M.D., Langenburg; R. G. Stephenson, M.D., Moosomin. Committee on by-laws—J. A. Deyell, M.D., Alameda; A. S. Shadd, M.D., Melfort; T A. Patrick, M.D., Yorkton. Committee on ethics—G. R. Peterson, M.D., Saskatoon; A. S. McKean, Rouleau; D. R. Davis, M.D., Estevan.

A constitution and by-laws were adopted. Several papers were read by Drs. Seymour, Charlton, Henderson and others. A resolution by Dr. Seymour of Regina, seconded by Dr. Spence, of Prince Albert, was adopted and the association will memorialize the Provincial Government to take steps for the establishment of a sanitarium for the care of tuberculosis patients and to enact regulations for the prevention of tuberculosis contagion.

Dr. Kemp, of Indian Head, seconded by Dr. Seymour, of Regina, introduced a resolution asking that the provincial government empower municipalities to issue debentures for the establishment of hospitals at the principal places in the province and further to amend the present hospital act. This motion met with the approval of the convention.

Dr. Lafferty, of Calgary, said an agreement had been reached by which the $28,053 belonging to the old Territorial Medical Council was to be divided equally between the medical councils of Alberta and Saskatchewan. The councils would seek legislation in both provinces, to have a medical act passed suitable to present conditions. During the past year 343 men had registered with the Territorial Medical Council.

HAMILTON MEDICAL SOCIETY.

The regular monthly meeting of the Hamilton Medical Society was held on Wednesday Evening, March, 7th.

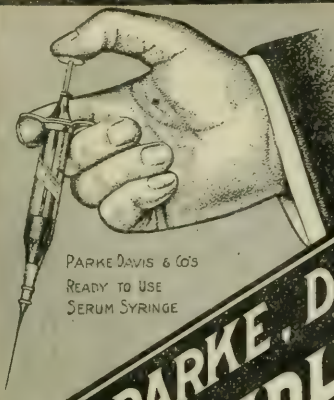
PROGRAM.

1—Pathological Specimens, Dr. I. Olmsted, Dr. D. G. Storms.

2—Some Mastoid Cases with Complications, Dr. W. Crawford.

3—Duke's Fourth Disease, Dr. James Ross.

4—Acute Articular Rheumatism, Dr. G. S. Glassco.



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A Point to Emphasize. By A. P. Reed, M.D., Naples, Me.—Glyco–Thymoline has a use with me that maybe many of its large circle of friends do not recognize. It is in the role of a lotion for skin diseases that I find it extremely valuable outside of its multifarious uses elsewhere. All skin irritations, and itching skin affections are not only alleviated but cured through its healing, excellent effects. All pruritic affections, whether of young or old, are immediately relieved by Glyco–Thymoline. Not least among valuable considerations is the fact that it may be used freely without danger of over–use or ill effects. Caution labels do not need to go with it. Its easy combination with other drugs makes it very handy, since it may be added to advantage to scores of old prescriptions, making them much more valuable. In itself it makes a very cleanly, agreeable and elegant preparation that at once commends itself to the patient who has been accustomed to use greasy preparations often with less effect—a very valuable consideration also for all parties concerned. I have found many parasitic diseases even will yield to Glyco-Thymoline, while all cases of poisoning are cured with little delay if it is used generously enough, a point to be remembered.

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Disgestibility of Egg-O-See—Herewith are presented the results of the experimeats, undertaken with the object of determining the comparative digestibility of Egg-O-See and wheat bread.

The ease with which such a food as Egg-O-See may be digested and made capable of being absorbed by the tissues may depend upon two factors, first the readiness with which the food elements themselves yield to the action of the digestive enzymes and become broken up into their assimilable cleavage products, and, secondly,the rapidity with which these enzymes are able to attack the food owing to to its condition when eaten. That is, a dry substance like Egg-O-See cannot be swallowed without thorough chewing, in the course of which it is reduced to small fragments and easily penetrated by the digestic fluids, while bread on the other hand, especially fresh bread, is much more easily bolted in large pieces and only partially masticated. Accordingly, in the following experiments, it was thought best to use as a control some breadstuffs, such as soda crackers, in the same dry condition as Egg-O-See and broken into fragments of the same approximate size. A sample of thoroughly dried crust of bread was also used for the same reason.

The usual procedure in artificial digestion was followed. Carefully weighed amounts of the substances to be tested were taken, the percentage of proteids in each being first determined. These substances were placed in a quantity of water and equal amounts of pancreatin and a dilute solution of sodium carbonate added, the whole being put into flasks and the flasks placed in an incubator at 37.5 degrees C. (body temperature), the digestive process being permitted to act for one and one-half hours for one test and three hours for another series. At the expiration of these periods the digestive process was stopped and the flasks were turned over to Professor Keiser, Professor of Chemistry, for chemical analysis. Professor Keiser first filtered the solution from each flask and after washing the residue with distilled water, dried it and determined its weight. The difference between this weight and the weight of the original substance in each experiment gave the weight of the substance digested and from this was calculated the percentage of digestion.

From these results it was found that in the same period of time and under the same conditions in which 23 per cent of bread or of crackers is digested, 47 per cent of Egg-O-See is digested. In other words, Egg-O-See is twice as easy to digest as bread or crackers. This ratio is not materially altered when the digestion is carried on for a longer time as is seen in the second table.

It will be recalled that in artificial digestion, the presence of the end products, as digestion proceeds, inhibits more and more the action of the digestive enzymes so as to gradually slow down the rapidity of the digestive process and eventually to bring it to a standstill. Accordingly it is impossible to completely digest any food substance in vitro no matter how long the process be continued. This accounts for the apparently disproportionate amounts of wheat bread and Egg-O-See digested in a longer course of digestion as compared with the amount digested in the previous experiments; of course, in the alimentary canal, where the end products are absorbed as fast as formed digestion would be completed in much shorter space of time.

In the liquid filtered off from the undigested portion in each flask Professor Keiser made careful determinations of the amount of sugar present and found that the amount of sugar in the digested Egg-O-See was four times as great as the amount in digested bread and twelve times as great as the amount obtained from the soda crackers.

Comparing Egg-O-See with soda crackers it was evident that the greater digestibility of Egg-O-See cannot be due alone to the mechanical factor of its dried condition.—James Francis Abbott, Professor of Zoology, Washington University, St Louis, Mo.

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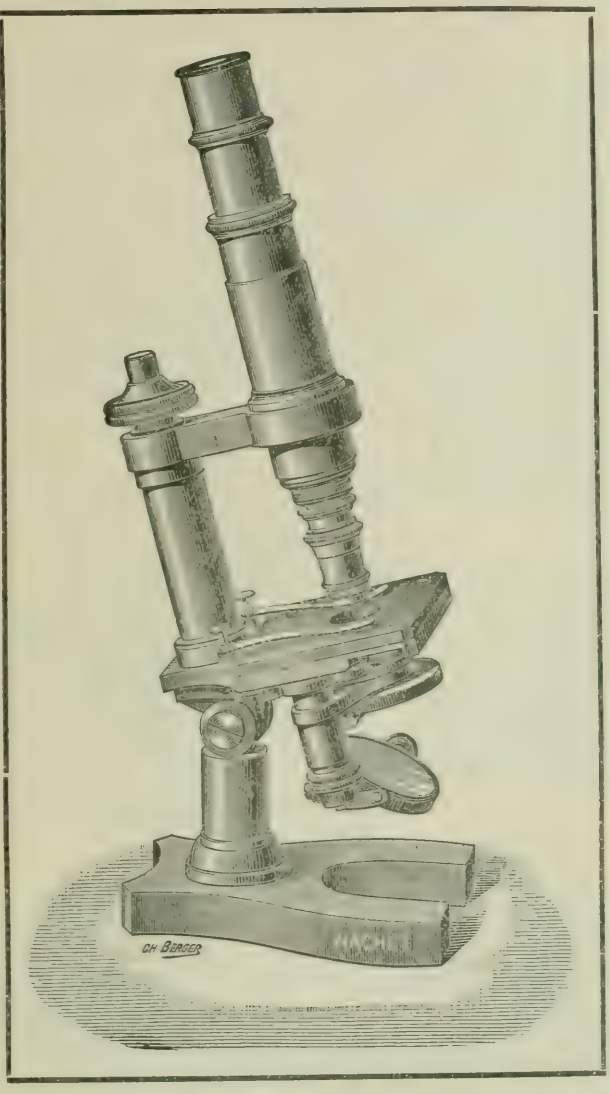

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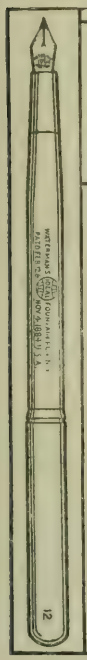

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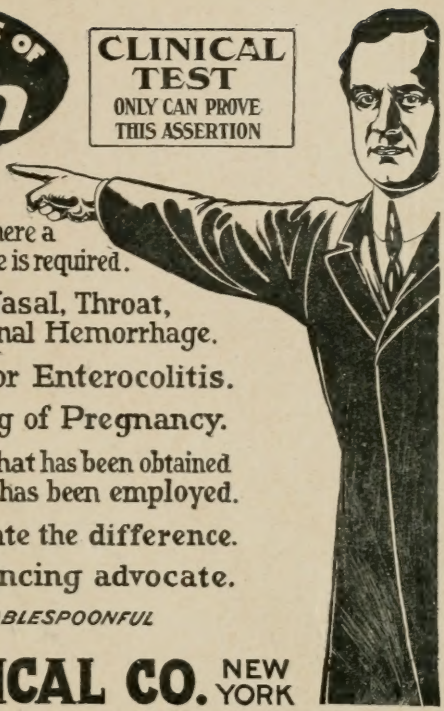

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